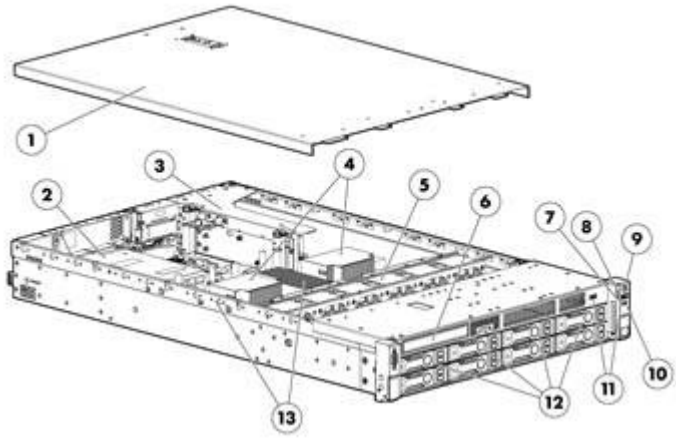
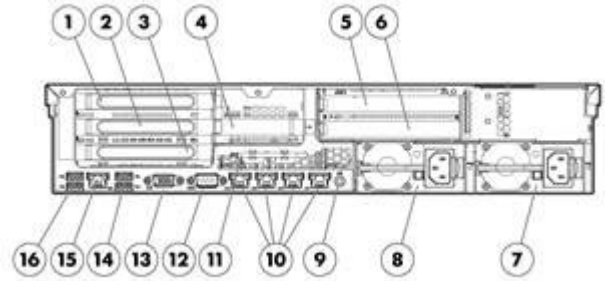
Overview

The HP ProLiant DL380e Gen8 sets the next generation standards of 2U 2-socket rack servers for the industry. With enhanced configuration flexibility, unmatched performance, and leading energy efficient design the DL380e Gen8 offers the perfect solution for the dynamic compute and storage requirements of today's demanding datacenters.





Front View:

1. Quick removal access panel
2. Redundant Hot Plug Power Supplies(upgradeable option)
3. Removable Riser Cage assembly
4. Up to 2 Intel E5-2400 Series Processors
5. Removable Hot Plug Fans modules, (optional, full N+1 redundancy)
6. Optical Disk Drive Bay
7. Health LED
8. Network activity LED
9. Power On /Standby button and system power LED button
10. Unit ID LED
11. USB connectors
12. Hard Drive bays
13. 12 DIMM slots: DDR3 Registered(RDIMM), Load Reduced (LRDIMM) or Unbuffered(UDIMM) memory

Rear View:

1. Slot1 PCIe3 x8 (4, 1)
2. Slot2 PCIe3 x16 (8, 4, 1)
3. Only for riser board without SAS support: Slot3 PCIe3 x8 (8, 4, 1)
4. Slot4 PCIe2 x8 (4, 1)
5. Slot5 PCIe3 x16 (16, 8, 4, 1) (optional)
6. Slot6 PCIe3 x16 (8, 4, 1) (optional)
7. Power Supply bay1 (Primary Power Supply)
8. Power Supply bay 2 (Shown populated: optional)
9. Unit ID LED/Button
10. HP Ethernet 1Gb 4-port 366i Adapter (4 x 1GbE)
11. Service tool
12. Serial connector
13. Video connector
14. USB connectors (2)
15. iLO connector
16. USB connectors (2)

Standard Features

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

Processor One of the following depending on Model	**Entry Processors** **NOTE:** All support up to 1066MHz DDR3 memory speeds. Intel® Xeon® E5-2407 (2.2GHz/4-core/10MB/6.4GT-s QPI/80W, DDR3-1066, HT) Intel® Xeon® E5-2403 (1.8GHz/4-core/10MB/6.4GT-s QPI/80W, DDR3-1066, HT) **Base Processors** **NOTE:** All support up to1333MHz DDR3 memory speeds. Intel® Xeon® E5-2440 (2.4GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)Turbo Intel® Xeon® E5-2430 (2.2GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)Turbo Intel® Xeon® E5-2430L (2.0GHz/6-core/15MB/7.2GT-s QPI/60W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)Turbo Intel® Xeon® E5-2420 (1.9GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)Turbo **Performance Processors** **NOTE:** All support up to 1600MHz DDR3 memory speeds. Intel® Xeon® E5-2470 (2.3GHz/8-core/20MB/8GT-s QPI/95W,DDR3-1600, HT, Turbo2-5/5/6/6/7/7/8/8)Turbo+ Intel® Xeon® E5-2450 (2.1GHz/8-core/20MB/8GT-s QPI/95W, DDR3-1600, HT, Turbo2-5/5/6/6/7/7/8/8)Turbo+ Intel® Xeon® E5-2450L (1.8GHz/8-core/20MB/8GT-s QPI/70W, DDR3-1600, HT, Turbo2-2/2/3/3/4/4/5/5)Turbo+ **NOTE:** HT indicates that the processor model supports Intel® Hyper-Threading Technology. **NOTE:** Turbo2 indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 8, 7, 6, 5, 4, 3, 2 and 1 cores active. **NOTE:** DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed. **NOTE:** Up to 2 processors supported. Mixing different processor models is not supported. **NOTE:** For the Intel® C600 Chipset E5-2400 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2400x v#, 2 = number of CPUs in a Node, 4 is socket/segment designation, 00 = Processor SKU, x = L for low power SKUs and v# (not yet designated) = version number.
Cache Memory One of the following depending on Model	20MB (1x20MB) Level 3 **NOTE:** For Eight-core processors. 15MB (1x15MB) Level 3 **NOTE:** For Six-core processors. 10MB (1x10MB) Level 3 **NOTE:** For Quad-core processors. **NOTE:** All processor models above list the L3 Cache associated with that particular processor.

Standard Features

Chipset	Intel® C600 Series Chipset Intel® E5-2400 Processor Family **NOTE:** For more information regarding Intel chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/.	
Upgradeability	Upgradeable to 2 processors (16 Cores) Up to 12 DIMM slots available **NOTE:** To take advantage of DIMMs 7-12, a second processor must be installed 10 Gigabit networking options via standup card Optional 2 slot riser (x16, x8) **NOTE:** To take advantage of the additional 2 PCI slot upgrade, a second processor must be installed. Redundant Power Supply Redundant Fan Optical Drive (8SFF/8LFF only)	
On System Management Processor	HP iLO (Firmware: HP iLO 4) **NOTE:** For more information, visit: http://www.hp.com/go/ilo	
Memory Protection	Advanced ECC Online Spare Lock-step mode	
Memory One of the following depending on Model	Type	HP SmartMemory DDR3 Load Reduced (LRDIMM), Registered (RDIMM) or Unbuffered (UDIMM)
	DIMM Slots Available	12 (6 DIMM slots per processor, 3 channels per processor, 2 DIMMs per channel)
	Standard (Entry Models - SATA)	4GB (1 x 4GB) Registered DIMMs PC3-10600R (1333MHz)
	Standard (Entry Models - SAS)	4GB (1 x 4GB) Registered DIMMs PC3-10600R (1333MHz)
	Standard (Base Models - LFF)	8GB (2 x 4GB) Registered DIMMs PC3-10600R (1333MHz)
	Standard (Base Models - SFF)	8GB (2 x 4GB) Registered DIMMs PC3-10600R (1333MHz)
	Standard (High Performance Models)	24GB (6 x 4GB) Registered DIMMs PC3-12800R (1333MHz)
	Standard (Storage Models - LFF)	12GB (3 x 4GB) Registered DIMMs PC3-12800R (1333MHz)
	Standard (Storage Models - SFF)	12GB (3 x 4GB) Registered DIMMs PC3-12800R (1333MHz)

Standard Features

Maximum Capacity (LRDIMM)	384GB (12 x 32GB LRDIMM @1333MHz)
Maximum Capacity (RDIMM)	192GB (12 x 16GB RDIMM @1600MHz or 1333MHz)
Maximum Capacity (UDIMM)	96GB (12 x 8GB UDIMM @1333MHz)

NOTE: HP memory from previous generation servers are not fully compatible with the HP ProLiant DL380e Gen8 Server.
NOTE: To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html
NOTE: If only one processor is installed, only half the DIMM slots are available
NOTE: UDIMM max DIMM population is 12
NOTE: Depending on the memory configuration and processor model, the memory speed may run at 1600MHz, 1333MHz, or 1066MHz. Please see Memory Population Table or the Online Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator.

Network Controller

The HP ProLiant DL380e Gen8 server offers the customer a quad-port NIC standard with the option to upgrade with a variety of networking options.

HP Ethernet 1Gb 4-port 366i Adapter

Expansion Slots

Primary Riser (Standard)	Expansion Slots #	Technology	Bus Width**	Connector Width	Form Factor	Notes
	1	PCIe Gen3.0	X4	X8	Full Length, Full Height Slot	
	2	PCIe Gen3.0	X8	X16	Half Length, Full Height Slot	
	3	PCIe Gen3.0	X8	X8	Half Length, Full Height Slot	
	4	PCIe Gen2.0	X4	X8	Low Profile	

** Indicates the number of physical electrical lanes running to the connector.

Primary Riser (Riser with SAS)	Expansion Slots #	Technology	Bus Width**	Connector Width	Form Factor	Notes
	1	PCIe Gen3.0	X4	X8	Full Length, Full Height Slot	
	2	PCIe Gen3.0	X8	X16	Half Length, Full Height Slot	
	3	PCIe Gen3.0	NA	NA	NA	Not available for Riser with SAS
	4	PCIe Gen2.0	X4	X8	Low Profile	

** Indicates the number of physical electrical lanes running to the connector.
NOTE: This riser kit comes with B320i Smart Array controller which provides support for up to 8 SAS or SATA drives and requires a SAS license key to support SAS drives.

Standard Features

Secondary Riser (Optional)	Expansion Slots #	Technology	Bus Width**	Connector Width	Form Factor	Notes
	5	PCIe 3.0	X16	X16	Full length, full height slot	
	6	PCIe 3.0	X8	X16	Half length, full height slot	

** Indicates the number of physical electrical lanes running to the connector.
NOTE: When populating slots on secondary riser (p/n 661628-B21), a second processor must be installed.
NOTE: Slot 5 supports up to 225w PCIe cards. An additional Graphic Card Power Adapter Kit is required (663282-B21). See Option Section below for offering.
NOTE: Adding the rear drive cage negates the space required for secondary optional riser slots 5 & 6.

HP Server ROM

HP ROM (Read Only Memory) is now digitally signed using HP's Corporate Signing Service. This signature is verified before the flash process starts, reducing accidental programming and preventing malicious efforts to corrupt system ROM.

HP ROM provides for essential initialization and validation of hardware components before control is passed to the customer-installed operating system. The ROM also provides the capability of booting from various fixed media (HDD, CD-ROM) and removable media (USB), to continue operation to the operating system.

HP ROM performs very early configuration of the video controller, to allow monitoring of initialization progress via an attached monitor. If configuration or hardware errors are discovered during this early phase of hardware initialization, suitable messages are now displayed on the connected monitor. Additionally, these configuration or hardware errors are logged to the Integrated Management Log (IML) to assist in diagnosis.

HP's ProLiant ROM is used to configure the following:

- Processor and chipset status registers
- System memory, memory map, and memory initialization
- System hardware configuration (Integrated PCI devices and optional PCIe cards).
- Customer-specific BIOS configuration (using the HP ROM-Based Setup Utility (RBSU).

NOTE: For further information, please refer to HP's RBSU (ROM based setup utility) user guide: www.hp.com/support/rbsu.

Standard Features

Storage Controller One of the following depending on Model	Entry Model - SATA	HP Dynamic Smart Array B120i Controller **NOTE:** Provides support for up to 6 SATA drives and data transmission speeds up to 3Gb/s
	Entry Model - SAS	HP Dynamic Smart Array B320i/512MB FBWC Controller **NOTE:** Provides support for up to 8 SAS/SATA drives, data transmission speeds up to 6Gb/s and includes SAS license key.
	Base Models - LFF	HP Dynamic Smart Array B320i/512MB FBWC Controller **NOTE:** Provides support for up to 8 SATA drives, data transmission speeds up to 6Gb/s and requires purchase of SAS license key for SAS mode.
	Base Model - SFF	HP Dynamic Smart Array B320i/512MB FBWC Controller **NOTE:** Provides support for up to 8 SAS/SATA drives, data transmission speeds up to 6Gb/s and includes SAS license key.
	High Performance Models	HP Smart Array P420/1GB FBWC Controller (RAID 0/1/1+0/5/5+0)
	Storage Models - LFF	HP Smart Array P420/1GB FBWC Controller (RAID 0/1/1+0/5/5+0)
	Storage Models - SFF	HP Smart Array P420/2GB FBWC Controller (RAID 0/1/1+0/5/5+0)

Internal Storage Devices One of the following depending on Model	Diskette Drive	None
	Optical Drive	Optional DVD-ROM, DVD-RW **NOTE:** This option available with all 8SFF or 8LFF drive bay models.
	Hard Drives	None ship standard
	Drive Bays	8 SFF drive bays total with Optical Bay Optional: +8SFF drive bay (total of 16SFF drive bays) **NOTE:** The Optical Drive bay is not available with +8SFF drive bay optional upgrade. 8 LFF drive bays total with Optical Bay 12 LFF drive bays total without Optical Bay Optional: +2 Rear Drive Bays (LFF or SFF) 25 SFF drive bays total without Optical Bay Optional: +2 Rear Drive Bays (LFF or SFF) **NOTE:** Drive cage changes are not supported except for adding +8SFF to an existing 8SFF drive cage. **NOTE:** Adding the rear drive cage negates the space required for secondary optional riser slots 5 & 6. **NOTE:** All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using either P/N 666987-B21: HP SFF Gen8 Hard Drive Blank Kit or P/N 666986-B21: HP LFF Gen8 Hard Drive Blank Kit. These part numbers for single HDD blanks below are also provided should the customer require replacement HDD blanks for their server.

Standard Features

Maximum Internal Storage	Hot Plug SFF SAS	32.4 TB	27 x 1.2TB (with 25SFF drive cage + Rear 2SFF drive cage)
	Hot Plug SFF SATA	27.0 TB	27 x 1TB (with 25SFF drive cage + Rear 2SFF drive cage)
	Hot Plug LFF SAS	42.0 TB	14 x 3TB (with 12LFF drive cage + Rear 2LFF drive cage)
	Hot Plug LFF SATA	56 TB	14 x 4TB (with 12LFF drive cage + Rear 2LFF drive cage)
	Hot Plug SFF SAS SSD	21.6 TB	27 x 800GB (with 25SFF drive cage + Rear 2SFF drive cage)
	Hot Plug SFF SATA SSD	21.6 TB	27 x 800GB (with 25SFF drive cage + Rear 2SFF drive cage)
	Hot Plug LFF SATA SSD	11.2 TB	14 x 800GB (with 12LFF drive cage + Rear 2LFF drive cage)

Interfaces	Serial	1
	Video	2 (1 front, 1 back) not active simultaneously
	LOM Network Ports	4x1GbE ports
	HP iLO Remote Management Network Port	1 Gb Dedicated
	SD slot	1 Internal Secure **NOTE:** The SD slot is not a hot-pluggable device. Customers should not attempt to plug an SD card into the SD slot while the server is powered.
	USB 2.0 Ports	Up to 7 total: up to 2 front, 4 back, 1 internal (secure) **NOTE:** 12LFF and 25SFF drive cage models have 1front, 4 back and 1 internal USB ports.

Industry Standard Compliance

ACPI 2.0b Compliant
PCIe 3.0 Compliant
PXE Support
WOL Support
Microsoft® Logo certifications
USB 2.0 Compliant

Server Power Cords

High voltage power cord ships standard with all part numbers.
NOTE: HP ProLiant DL servers no longer ship standard with a 12-foot NEMA 5-15P to C13 power cord that connects to 110V US wall outlets in a home or office. ProLiant DL servers are primarily connected to power distribution units (PDUs) in data center racks and now ship standard with a PDU 6-foot C-14 to C13 power cord (A0K02A). If a user wishes to power a ProLiant DL server using a 110V receptacle (NEMA-15), the 6-foot NEMA 5-15 to C13 power cord must be ordered separately (AF556A). See Power Cords section for Worldwide Power Cord options.

Standard Features

Power Specifications

To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor.

NOTE: Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html

Common Slot Power Supply

NOTE: Mixing of power supplies in the same server is not supported. All power supplies inside a server must be exactly the same model. Mixing Gold, Platinum, and Platinum Plus certified power supplies is not supported.

HP's Common Slot (CS) power supplies allow for commonality of power supplies across a wide range of ProLiant and Integrity servers, as well as HP Storage solutions, and are designed to provide the highest power supply efficiency without degrading system performance. HP CS power supplies are tested by the Electric Power Research Institute (EPRI) and certified through the ECOS 80 Plus power supply program. HP CS power supply options provide efficiency ratings of up to 94% (80 Plus Platinum) and are available in three power output options - 460W, 750W, and 1200W - allowing the customer to "right-size" a power supply for their specific server configuration. All HP Common Slot power sources are UL, CE Mark Compliant, hot-plug and support redundant configurations.

NOTE: Mixing of power supplies in the same server is not supported. All power supplies must be of the same output and efficiency rating. If non-matched power supplies are inserted you will get errors and operation will fail.

HP CS Platinum Plus power supplies are required when enabling HP's Power Discovery Services. a solution that creates an automated, energy-aware network between IT systems and facilities. This allows your company to reclaim millions of dollars in wasted power capacity and downtime costs across data centers. For more information on HP's Power Discovery Services, go to: www.hp.com/go/ipd.
It is highly recommended that you use the HP Power Advisor in defining the "Right-Size" power supply for your needs. HP Power Advisor can be accessed at: www.hp.com/go/hppoweradvisor.

NOTE: The 80 PLUS program is a unique forum that unites electric utilities, the computer industry, and consumers in an effort to bring energy efficient technology solutions to the marketplace. 80 Plus independently tests power supply efficiency and publicly posts the results on www.80Plus.org.

Redundant Power: Optional (1+ 1) power supplies can be purchased through power supply option kits (see Power Supplies for part numbers).

NOTE: Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html

Standard Features

System Fans
One of the following depending on Model

4 Hot-Plug Non-redundant Fans ship standard in 1P Models

- 1P: 4 fans - non-redundancy
- 1P: 5 fans - redundancy

6 Hot-plug Redundant Fans ship standard in 2P Models

- 2P: 5 fans - non-redundancy
- 2P: 6 fans - redundancy

NOTE: Customers may separately purchase redundant fans with the 667855-B21 option kit. Additional fans to support redundancy are also included in -B21 processor option kits when upgrading from one processor to two processor.

Required Cabling

For required cabling information, refer to the HP Web site at: www.hp.com/servers/dl380e-gen8.

Operating Systems and Virtualization Software Support for ProLiant Servers

Microsoft Windows Server
Red Hat Enterprise Linux (RHEL)
SUSE Linux Enterprise Server (SLES)
Oracle Solaris
VMware

NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/ossupport and our driver download page http://www.hp.com/support/DL380eGen8

Graphics

Integrated Matrox G200 video standard

- 1280 x 1024 (32 bpp)
- 1920 x 1200 (16 bpp)

HP iLO 4 On System Management Memory

- 16 MB Flash
- 256 MB DDR 3 with ECC (112 MB after ECC and video)

Standard Features

Form Factor One of the following depending on Model		2U Rack form factor Entry models ship with fixed rails. All other models ship with sliding rails and cable management system. 8 SFF Drive Bay Version: 3.44 (8.75 cm) Height x 17.54" (44.55 cm) Width x 27.5" (69.85 cm) Length 8 LFF Drive Bay Version: 3.44 (8.75cm) Height x 17.54" (44.55 cm) Width x 29.5" (74.94cm) Length 12 LFF Drive Bay Version: 3.44 (8.75cm) Height x 17.54" (44.55 cm) Width x 29.5" (74.94cm) Length 25 SFF Drive Bay Version: 3.44 (8.75 cm) Height x 17.54" (44.55 cm) Width x 27.5" (69.85 cm) Length
On System Management	HP iLO Management Engine	HP iLO Management Engine is a comprehensive set of embedded management features supporting the complete lifecycle of the server, from initial deployment, through ongoing management, to service alerting and remote support. HP iLO Management Engine comes standard on all HP ProLiant Gen8 servers. The HP iLO Management Engine portfolio includes: ● **HP iLO:** The HP iLO (Integrated Lights-Out) management processor is the core foundation for the HP iLO Management Engine ● **HP Agentless Management:** Provides built in server health monitoring and alerting capability without OS agents, that starts working the moment a power cord and an Ethernet cable are connected. ● **HP Active Health System:** Always on, continuous monitoring for increased stability and shorter downtimes; 100% configuration history; Health and service alerts and easy export and upload to Service and Support. ● **HP Intelligent Provisioning:** Lets customers provision and configure a single server without any separate media. No more SmartStart CDs or Smart Update Firmware DVD are needed. ○ To start Intelligent Provisioning: ■ Press the F10 key during the ProLiant Gen8 server boot process (also known as power on self test or POST). ■ Please go to the Intelligent Provisioning website at www.hp.com/go/intelligentprovisioning for additional information and to view usage videos. ■ Use the Service Pack for ProLiant (SPP) at www.hp.com/go/spp to get firmware and software updates. ● **HP iLO Mobile App:** Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: www.hp.com/go/ilo/mobileapp **NOTE:** For more information, visit: http://www.hp.com/go/ilo or HP iLO Management Engine technologies whitepaper

Standard Features

HP Insight Management	HP Service Pack for ProLiant (SPP)	HP Service Pack for ProLiant (SPP) and HP Smart Update Manager (HP SUM) version 5 provide a new, comprehensive approach to firmware and system software maintenance. Together they provide better operating stability and ensure maximum uptime. The SPP will be updated at a predictable cadence, typically coinciding with new HP server hardware launches. By enabling all firmware to be updated online and integrating firmware and system software updates in one operation HP SUM and the SPP offer faster updates of individual servers and dramatically faster updates of entire BladeSystem enclosures. Further improving system uptime and stability is the fact that HP provides 12 months of support on each Service Pack for ProLiant. The user experience around HP SUM and the SPP has been improved in several ways, starting with the web download. A single web page provides access to a single download containing both the latest version of HP SUM version 5 and the latest SPP. Optional smaller subsets with only specific types of servers or specific operating systems are offered to save on download time. The HP SUM application has been re-written to provide a more straightforward, intuitive user interface that guides the user through the steps of discovery, analyses and update, providing comprehensive information on available updates, criticality and interdependencies. This information is also available in reports. By providing the option of multiple local or shared repositories which can be easily updated from hp.com, HP SUM provides the tools to optimize stability and consistency throughout the company. While HP SUM and the SPP will recommend the combinations of firmware and system software that HP has found to be the best practice, the application gives customers the flexibility to set their own specific baseline. The Service Pack for ProLiant has been rigorously tested with specific attention for interaction between firmware, drivers and agents both within the server as well as in interaction with the BladeSystem enclosure components (Onboard Administrator and Virtual Connect). This testing ensures the highest quality as well as providing the input for HP SUM to deploy updates taking into account all interdepencies, when determining the correct updates and order of update deployment. **NOTE:** The Service Pack for ProLiant (which includes HP SUM 5) can be downloaded from www.hp.com/go/spp/download. More information can be found: www.hp.com/go/spp and http://www.hp.com/go/hpsum
Security	Power-on password Serial interface control Administrator's password	

Standard Features

Warranty

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

NOTE: Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:
http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Optional Features

HP Insight Management	HP Insight Control	HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. HP Insight Control also supports Location and Power Discovery Services to automate many configuration, asset tracking, and power management tasks to speed implementation and prevent downtime. For more information, see http://www.hp.com/go/insightcontrol. HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, see: http://www.hp.com/services/insight.
	HP iLO Essentials	HP iLO Essentials license ideal for small and medium business customers. The specially created HP iLO Essentials (a subset of iLO Advanced functionality) saves SMB customers time and money, by ease of remote server set up through the interactive virtual media, lowering operational costs with remote access via the Integrated Remote Console, and faster time to resolution with email-based proactive notifications. With this newly designed HP iLO Essentials license SMB customers now have the option of a server management package solely design and priced just right for their IT environments. HP iLO Essentials is available on all HP ProLiant Gen8 e-series making this an ideal solution for small business owners. For more information, see: http://www.hp.com/go/iLO/essentials
	HP iLO Advanced	HP Integrated Lights-Out Advanced License a product option, providing smart remote server management without compromise. iLO Advanced unlocks the full set of remote administration functionality for all HP ProLiant servers by activating the full Virtual Keyboard Video and Mouse remote console, multi-user collaboration, console record and replay, GUI-based and scripted virtual media and virtual folders, and enhanced security and power management functionality. For more information, see: http://www.hp.com/go/iloadvance
	HP Matrix Operating Environment	The HP Matrix Operating Environment (Matrix OE) for ProLiant and Integrity servers is an integrated command center that helps you instantly adjust to dynamic business demands. This advanced infrastructure management software lets you reduce the cost of common data center tasks by up to 40 percent while keeping pace with your changing business. The HP Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HP CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS). **NOTE:** For more information, visit: http://www.hp.com/go/matrixoe
High Performance Clusters	HP Cluster Platforms	HP Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. http://www.hp.com/go/clusters

Optional Features

HP HPC Interconnects	High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools. http://www.hp.com/techservers/clusters/ucp/index.html
HP Insight Cluster Management Utility	HP Insight Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used for lifecycle management of hyperscale clusters of Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. http://www.hp.com/go/cmu
HP HPC Linux Value Pack	HP HPC Linux Value Pack (Value Pack) is an HP-licensed and HP-supported option to HP Insight CMU, for the development and deployment of applications on HPC Cluster Platforms. Value Pack includes the Platform LSF workload scheduler and Platform Application Center, as well as the HP-MPI parallelization library. HP HPC Linux Value Pack

Storage Software

Whether you need to solve a specific data protection, archiving, or storage command and control challenge, or deliver on strategic consolidation, compliance, or continuity initiatives, look no further than HP storage software. Our storage software helps you reduce costs, simplify storage infrastructure, protect vital assets and respond faster to business opportunities.

Storage software that gets the job done:

- **Data Protection and Recovery Software**
  Whether you're a large enterprise or a smaller business, HP data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.
- **Data Archive and Migration Software**
  HP's storage software enables you to comply with data retention and retrieval requirements, improve application performance, and reduce costs by efficiently migrating infrequently accessed or less valuable data to lower cost storage.
- **Storage Resource Management Software (SRM)**
  HP's storage resource management software reduces operational costs and provides the command and control foundation you need to efficiently manage and visualize your physical and virtual environments.
- **Data Replication Software**
  HP offers array-based and host-based replication software for use in disaster recovery, testing, application development and reporting.
- **Storage Device Management Software**
  Maximize your investment in HP storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.
- **HP StoreVirtual VSA**
  With HP StoreVirtual VSA you can use the power of virtualization to turn a set of heterogeneous and disconnected physical disk drives in your servers and storage devices into a single pool of logical storage capacity.

NOTE: For more information available Storage Software including QuickSpecs, please see: www.hp.com/go/storage/software.

Optional Features

HP Insight Online	HP Insight Online is a new addition to the HP Support Center for one stop, secure access to product and HP support information personalized to your IT environment. Insight Online can automatically display devices remotely monitored by HP Insight Remote Support. With Insight Online's easy navigation you can efficiently track your IT support contracts and device status from anywhere and at anytime. www.hp.com/go/insightonline
HP Proactive Insight experience	Prevent problems with innovative, automated monitoring tools and proactive services. The HP Proactive Insight experience consist of using Insight Online, Insight Remote Support, and Proactive Care Support Service as one integrated solution. The Proactive Insight experience provides you with expert advice and personalized, cloud-based automated IT support, helping to prevent unplanned down time and solve problems quickly. For more information, visit: www.hp.com/go/proactiveinsightexperience
Factory Express Portfolio for Servers and Storage	HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, EVA7xxx, EVA, XP, rackable tape libraries and configurable network switches. For more information on Factory Express services for your specific server model please contact your sales representative or go to: http://www.hp.com/go/factory-express.
HP Simple Configurator	SCE is a guided self service tool to help sales and non technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use in your existing ordering processes. If you require "custom" rack configuration or configuration for products not available in SCE, please contact HP's Customer Business Center or an Authorized Partner for assistance. http://www.hp.com/products/configurator

Service and Support

Service and Support

HP Technology Services for Industry Standard Servers and BladeSystem
Capitalizing on HP ProLiant server and HP BladeSystem capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services.

What HP ProLiant and BladeSystem Services can do for you
HP ProLiant and BladeSystem Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. This way, HP proposes services solutions that include more than just uplift of base warranty. Foundation Care services deliver scalable support-packages for HP industry-standard servers and software. You can choose the type and level of service that is most suitable for their business needs. New to this portfolio is HP Collaborative Support. If you are running business critical environments, HP offers Proactive Care or Critical Advantage. These services help deliver high levels of application availability through proactive service management and advanced technical response
You can get the support you need by choosing from one of a number of service packaged solutions we have designed to address wider set of customer support needs.

HP Technology Services meets business challenges with services offered in three support recommendations - **Optimized Care, Standard Care, and Basic Care** - available for each product group. Such support solutions enable customers to optimize technology operations, minimize risk and drive better business outcomes with easy-to-buy, easy-to-use scalable support recommendations for servers, storage, networking and software designed to meet your specific needs.

All three service recommendations include support services from the broader portfolio of Foundation Care and Proactive Care services.

Optimized Care

Optimized Care: Supports maintaining servers at optimum performance availability

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf

HP Installation and Startup for Insight Control Software / HP SIM
Provides for the deployment and basic configuration of HP Insight Control or HP SIM (Systems Insight Manager) on HP ProLiant ML and DL series servers or HP BladeSystem servers
http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf

3-Year HP 24x7 4 hour Response, Proactive Care
Helps optimize your systems and delivers high levels of application availability through proactive service management and advanced technical response. A skilled Technical Manager will own your call and end to end until resolved, delivering a single point of contact for you. Helping you to resolve your hardware and software issues and minimizing downtime in your business critical environment.

Additional Services: Factory Express, Education Services, Proactive Select - 30 Credit Package

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Service and Support

Standard Care

Standard Care: Service recommendation that maintains high level of server availability

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf

HP Installation and Startup for Insight Control Software / HP SIM
Provides for the deployment and basic configuration of HP Insight Control or HP SIM (Systems Insight Manager) on HP ProLiant ML and DL series servers or HP BladeSystem servers
http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf

3-Year HP 24x7 4 hour Response, Collaborative Support
Provides problem resolution support across the stack of HW, firmware, and HP and 3rd party SW. In case the issue is with 3rd party SW, HP does known issue resolution. If HP cannot solve the issue, it will contact the third-party vendor and create a problem incident on your behalf.
http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-8232ENW.pdf

Additional Services: Software support service with 24X7 availability with a 2 hour response, Training courses on Microsoft, Linux (Red Hat and SUSE), VMware, and HP Insight Software, 10 Proactive Select Credit package, Factory Express
http://www8.hp.com/us/en/business-services/it-services.html?compURI=1078865

Basic Care

Basic Care: delivers minimum recommended support service level

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf

3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service
Provides you with rapid remote support and if required an HP authorized technical engineer will be on site 24X7 begin hardware maintenance service within 4 hours of the service request being logged
http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE.pdf

3-Year , HP 24x7 Software Support for Insight Control
Provides remote 3-year software support service that delivers comprehensive software services, including access to HP technical resources and software updates
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf

Additional Services: Factory Express, Education Services, Proactive Select - 10 Credits

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Insight Remote Support

Provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. Learn more
http://www.hp.com/go/insightremotesupport

Service and Support

HP Support Center

Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more http://www.hp.com/go/hpsc

HP's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.
HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement.

*HP' Support Center Mobile App is subject to local availability

Warranty / Service Coverage

For ProLiant servers and storage systems, the services cover HP-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as external monitors up to 22" and tower UPS products; these items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction. It does not apply to any exchange of Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by HP as consumable parts and/or that have exceeded maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating manual or the technical data sheet are not eligible for the defective media retention service feature option.

For more information

To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: http://www.hp.com/services/proliant

Pre-configured Models

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.
NOTE: Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
NOTE: HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
NOTE: If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.
NOTE: All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using either P/N 666987-B21: HP SFF Gen8 Hard Drive Blank Kit or P/N 666986-B21: HP LFF Gen8 Hard Drive Blank Kit.
NOTE: When the SAS-enabled riser board with the Smart Array B320i controller is installed in the server, the embedded Smart Array B120i controller is automatically disabled. In the absence of another storage controller or an expander backplane, front drives operate in AHCI or Legacy mode. In these two modes, the drives are not part of a hardware RAID or a member of a logical drive. The Locate, Drive status, and Do not remove LEDs in the drive carrier are disabled.
NOTE: Not all models are available in all regions. Check with your local country HP offices for availability.

Entry Models - SATA

HP ProLiant DL380e Gen8 E5-2403 1P 4GB-R Hot Plug 4 LFF 460W PS Entry Server 648255-xx1	**Processor(s)**	(1) Intel® Xeon® E5-2403 (1.8GHz/4-core/10MB/6.4GT-s QPI/80W, DDR3-1066, HT) Processor
	Cache Memory	10MB (1x10MB) Level 3
	Memory	4GB (1 x 4GB) Registered DIMMs PC3-10600R (1333MHz) **NOTE:** Memory runs at 1066MHz speed due to processor.
	Network Controller	HP Ethernet 1Gb 4-port 366i Adapter
	Storage Controller	HP Dynamic Smart Array B120i Controller **NOTE:** Provides support for up to 6 SATA drives and data transmission speeds up to 3Gb/s Greater than 4 drives requires an additional cable (see p/n 675856-B21)
	Hard Drive	None ship standard; includes 7 LFF hard drive blanks **NOTE:** This model comes with 7 HDD blanks if no HDD is ordered.
	Internal Storage	8 LFF HDD Bays **NOTE:** This model comes with 8LFF Chassis.
	Optical Drive Bay	1; (Optional: DVD-ROM, DVD-RW)
	PCI-Express Slots	4 standard (1-FL/FH, 2-HL/FH, 1-LP)
	Power Supply	(1) HP 460W CS Gold Hot Plug Power Supply (92% Efficient)
	Fans	4 Hot-Plug Non-redundant Fans **NOTE:** Customers can upgrade to a redundant fan configuration with the purchase of an option kit (see p/n 667855-B21)
	Management	HP iLO Management Engine (standard) Optional: HP iLO Essentials or HP Insight Control
	Form Factor	Rack (2U) **NOTE:** Includes Rack Mounting Gen8 non-telescoping Friction Rail Kit which does not allow for in rack serviceability. The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP recommends

		that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.
	Warranty	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.

Entry Models - SAS

HP ProLiant DL380e Gen8 E5-2403 1P 4GB-R Hot Plug 8 SFF 460W PS Entry Server 648256-xx1	**Processor(s)**	(1) Intel® Xeon® E5-2403 (1.8GHz/4-core/10MB/6.4GT-s QPI/80W, DDR3-1066, HT) Processor
	Cache Memory	10MB (1x10MB) Level 3
	Memory	4GB (1 x 4GB) Registered DIMMs PC3L-10600R (1333MHz) **NOTE:** Memory runs at 1066MHz speed due to processor.
	Network Controller	HP Ethernet 1Gb 4-port 366i Adapter
	Storage Controller	HP Dynamic Smart Array B320i Controller **NOTE:** Provides support for up to 8 SAS/SATA drives, data transmission speeds up to 6Gb/s and includes SAS license key.
	Hard Drive	None ship standard; includes 7 SFF hard drive blanks **NOTE:** This model comes with 7 HDD blanks if no HDD is ordered.
	Internal Storage	8 SFF HDD Bays
	Optical Drive Bay	1; (Optional: DVD-ROM, DVD-RW)
	PCI-Express Slots	3 standard (1-FL/FH, 1HL/FH, 1-LP)
	Power Supply	(1) HP 460W CS Gold Hot Plug Power Supply (92% Efficient)
	Fans	4 Hot-Plug Non-redundant Fans **NOTE:** Customers can upgrade to a redundant fan configuration with the purchase of an option kit (see p/n 667855-B21)
	Management	HP iLO Management Engine (standard) Optional: HP iLO Essentials or HP Insight Control
	Form Factor	Rack (2U) **NOTE:** Includes Rack Mounting Gen8 non-telescoping Friction Rail Kit which does not allow for in rack serviceability. The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.
	Warranty	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.

Pre-configured Models

Base Models - LFF

HP ProLiant DL380e Gen8 E5-2407 1P 8GB-R Hot Plug 8 LFF 460W PS Base Server 668665-xx1	**Processor(s)**	Intel® Xeon® E5-2407 (2.2GHz/4-core/10MB/6.4GT-s QPI/80W, DDR3-1066, HT) Processor
	Cache Memory	10MB (1x10MB) Level 3
	Memory	8GB (2 x 4GB) Registered DIMMs PC3L-10600R (1333MHz)
	Network Controller	HP Ethernet 1Gb 4-port 366i Adapter
	Storage Controller	HP Dynamic Smart Array B320i/512MB FBWC Controller **NOTE:** Provides support for up to 8 SATA drives, data transmission speeds up to 6Gb/s and requires purchase of SAS license key for SAS mode.
	Hard Drive	None ship standard; includes 7 LFF hard drive blanks **NOTE:** This model comes with 7 HDD blanks if no HDD is ordered.
	Internal Storage	8 LFF HDD Bays
	Optical Drive Bay	1; (Optional: DVD-ROM, DVD-RW)
	PCI-Express Slots	3 standard (1-FL/FH, 1HL/FH, 1-LP)
	Power Supply	(1) HP 460W CS Gold Hot Plug Power Supply (92% Efficient)
	Fans	4 Hot-Plug Non-redundant Fans **NOTE:** Customers can upgrade to a redundant fan configuration with the purchase of an option kit (see p/n 667855-B21)
	Management	HP iLO Management Engine (standard) Optional: HP iLO Essentials or HP Insight Control
	Form Factor	Rack (2U) **NOTE:** Includes Rack Mounting Gen8 telescoping LFF Ball Bearing Rail Kit which does allow for in rack serviceability. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.
	Warranty	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.

Pre-configured Models

Base Models - SFF

HP ProLiant DL380e Gen8 E5-2407 1P 8GB-R Hot Plug 8 SFF 460W PS Base Server 668666-xx1	**Processor(s)**	(1)) Intel® Xeon® E5-2407 (2.2GHz/4-core/10MB/6.4GT-s QPI/80W, DDR3-1066, HT) Processor
	Cache Memory	10MB (1x10MB) Level 3
	Memory	8GB (2 x 4GB) Registered DIMMs PC3L-10600R (1333MHz)
	Network Controller	HP Ethernet 1Gb 4-port 366i Adapter
	Storage Controller	HP Dynamic Smart Array B320i/512MB FBWC Controller **NOTE:** Provides support for up to 8 SAS/SATA drives, data transmission speeds up to 6Gb/s and includes SAS license key.
	Hard Drive	None ship standard; includes 7 SFF hard drive blanks **NOTE:** This model comes with 7 HDD blanks if no HDD is ordered.
	Internal Storage	8 SFF HDD Bays
	Optical Drive Bay	1; (Optional: DVD-ROM, DVD-RW)
	PCI-Express Slots	3 standard (1-FL/FH, 1HL/FH, 1-LP)
	Power Supply	(1) HP 460W CS Gold Hot Plug Power Supply (92% Efficient)
	Fans	4 Hot-Plug Non-redundant Fans **NOTE:** Customers can upgrade to a redundant fan configuration with the purchase of an option kit (see p/n 667855-B21)
	Management	HP iLO Management Engine (standard) Optional: HP iLO Essentials or HP Insight Control
	Form Factor	Rack (2U) **NOTE:** Includes Rack Mounting Gen8 telescoping SFF Ball Bearing Rail Kit which does allow for in rack serviceability. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.
	Warranty	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.

Pre-configured Models

High Performance Models

NOTE: These Models are Energy Star Certified.

HP ProLiant DL380e Gen8 E5-2450 2P 24GB-R P420 Hot Plug 8 SFF 750W PS Perf Svr 668669-xx1	**Processor(s)**	(2) Intel® Xeon® E5-2450 (2.1GHz/8-core/20MB/8GT-s QPI/95W, DDR3-1600, HT, Turbo2- 5/5/6/6/7/7/8/8) Turbo+ Processors
	Cache Memory	20MB (1x20MB) Level 3
	Memory	24GB (6 x 4GB) Registered DIMMs PC3L-10600R (1333MHz)
	Network Controller	HP Ethernet 1Gb 4-port 366i Adapter
	Storage Controller	HP Smart Array P420/1GB FBWC Controller (RAID 0/1/1+0/5/5+0) **NOTE:** This controller would be installed on the standard riser card or the optional secondary riser card.
	Hard Drive	None ship standard; includes 7 SFF hard drive blanks **NOTE:** This model comes with 7 HDD blanks if no HDD is ordered.
	Internal Storage	8 SFF HDD Bays
	Optical Drive Bay	1; (Optional: DVD-ROM, DVD-RW)
	PCI-Express Slots	4 standard (1-FL/FH, 2-HL/FH, 1-LP)
	Power Supply	(2) HP 750W CS Gold Hot Plug Power Supplies (94% Efficient)
	Fans	6 Hot-plug Redundant Fans
	Management	HP iLO Management Engine (standard) HP Insight Control Standard
	Energy Star	Meets Energy Star requirements
	Form Factor	Rack (2U) **NOTE:** Includes Rack Mounting Gen8 telescoping 8SFF Ball Bearing Rail Kit which does allow for in rack serviceability. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.
	Warranty	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.

Pre-configured Models

Storage Models - LFF

HP ProLiant DL380e Gen8 E5-2420 1P 12GB-R P420 Hot Plug 12 LFF 750W PS Server 668667-xx1	**Processor(s)**	(1) Intel® Xeon® E5-2420 (1.9GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5) Turbo Processor
	Cache Memory	15MB (1x15MB) Level 3
	Memory	12GB (3 x 4GB) Registered DIMMs PC3L-10600R (1333MHz)
	Network Controller	HP Ethernet 1Gb 4-port 366i Adapter
	Storage Controller	HP Smart Array P420/1GB FBWC Controller (RAID 0/1/1+0/5/5+0) **NOTE:** This controller would be installed on the standard riser card or the optional secondary riser card.
	Hard Drive	None ship standard; includes 11 LFF hard drive blanks **NOTE:** This model comes with 11 HDD blanks if no HDD is ordered.
	Internal Storage	12 LFF HDD Bays
	Optical Drive Bay	N/A
	PCI-Express Slots	4 standard (1-FL/FH, 2-HL/FH, 1-LP)
	Power Supply	(1) HP 750W CS Gold Hot Plug Power Supply (92% Efficient)
	Fans	4 Hot-Plug Non-redundant Fans
	Management	HP iLO Management Engine (standard) Optional: HP iLO Essentials or HP Insight Control
	Form Factor	Rack (2U) **NOTE:** Includes Rack Mounting Gen8 telescoping LFF Ball Bearing Rail Kit which does allow for in rack serviceability. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.
	Warranty	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.

Pre-configured Models

Storage Models - SFF

HP ProLiant DL380e Gen8 E5-2420 1P 12GB-R P420 Hot Plug 25 SFF 750W PS Server 668668-xx1	**Processor(s)**	(1) Intel® Xeon® E5-2420 (1.9GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5) Turbo Processor
	Cache Memory	15MB (1x15MB) Level 3
	Memory	12GB (3 x 4GB) Registered DIMMs PC3L-10600R (1333MHz)
	Network Controller	HP Ethernet 1Gb 4-port 366i Adapter
	Storage Controller	HP Smart Array P420/2GB FBWC Controller (RAID 0/1/1+0/5/5+0) **NOTE:** This controller would be installed on the standard riser card or the optional secondary riser card.
	Hard Drive	None ship standard; includes 24 SFF hard drive blanks **NOTE:** This model comes with 24 HDD blanks if no HDD is ordered.
	Internal Storage	25 SFF HDD Bays
	Optical Drive Bay	N/A
	PCI-Express Slots	4 standard (1-FL/FH, 2-HL/FH, 1-LP)
	Power Supply	(1) HP 750W CS Gold Hot Plug Power Supply (92% Efficient)
	Fans	4 Hot-Plug Non-redundant Fans
	Management	HP iLO Management Engine (standard) Optional: HP iLO Essentials or HP Insight Control
	Form Factor	Rack (2U) **NOTE:** Includes Rack Mounting Gen8 telescoping SFF Ball Bearing Rail Kit which does allow for in rack serviceability. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.
	Warranty	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.

Country Code Key	xx = 00	U.S.
	xx = 20	Brazil
	xx = 29	Japan
	xx = 37	APD
	xx = 42	Europe
	xx = AA	PRC

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.
NOTE: Factory Integrated Models must start with a CTO Server.
NOTE: FIO indicates that this option is only available as a factory installable option.
NOTE: All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.

Step 1: Base Configuration (choose one of the following configurable models)

NOTE: Rail kits and cable management solutions are optional in CTO. See "Step 3: Choose Additional Factory Integratable Options" for details on ordering.
NOTE: The DL380e ships standard with the Dynamic Smart Array B120i controller which provides support for up to 6 SATA drives (greater than 4 drives requires additional cable, p/n 675856-B21) and data transmission speeds up to 3Gb/s. Customers requiring SAS support or greater than 6 drives should select either a Smart Array family controller or the HP Dynamic Smart Array B320i controller (p/n 661402-B21, implemented via riser).
NOTE: When the SAS-enabled riser board with the Smart Array B320i controller is installed in the server, the embedded Smart Array B120i controller is automatically disabled. In the absence of another storage controller or an expander backplane, front drives operate in ACHI or Legacy mode. In these two modes, the drives are not part of a hardware RAID or a member of a logical drive. The Locate, Drive status, and Do not remove LEDs in the drive carrier are disabled.
NOTE: Number of HDD blanks in a given chassis is same as number of drive cage bays.
NOTE: Power Supply not included - choose from Options section.

HP Models

HP ProLiant DL380e Gen8 12 LFF Configure-to-order Server — 669254-B21

NOTE: This CTO server is designed for customers who are looking for maximum 2U storage performance and density. This model requires two (2) Smart Array P420 controllers if using more than 8 drives.

Factory Integrated Model ships with:

2 x HP Smart Socket Guides for fast processor installation.
12 DIMM slots for RDIMM, LRDIMM and UDIMM Memory installation
HP Ethernet 1Gb 4-port 366i Adapter
HP Dynamic Smart Array B120i Controller with Zero Memory (ZM)
I/O slots - 4 Slots come standard:

- Slot 1 - FL/FH x4 PCIe 3.0 (x8 connector)
- Slot 2 - HL/FH x8 PCIe 3.0 (x16 connector)
- Slot 3 - HL/FH x8 PCIe 3.0 (x8 connector)
- Slot 4 - Low Profile x4 PCIe 2.0 (x8 connector)
- Additional Slots may be added via selections from the PCI Information and

Options subsection
System Fans - 4 (1 additional fan included with purchase of second processor)
Drive Cage - 12-LFF
USB - 4 Rear, 1 Front, 1 Internal, 1 SD slot
HP iLO Management Engine (standard)

NOTE: New options are available for Rack Rail Kits; these options are no longer standard on-board with this Model Part Number. Please see HP Rack Options below for optional required options.

HP ProLiant DL380e Gen8 12 LFF Configure-to-order Server — 669257-B21

NOTE: This CTO server includes an "expander-based" storage backplane. A single Smart Array P420 controller is capable of controlling all 12 LFF drives and optional rear drives.

Configuration Information - Factory Integrated Models

Factory Integrated Model ships with:

2 x HP Smart Socket Guides for fast processor installation.
12 DIMM slots for RDIMM, LRDIMM and UDIMM Memory installation
HP Ethernet 1Gb 4-port 366i Adapter
HP Dynamic Smart Array B120i Controller with Zero Memory (ZM)
I/O slots - 4 Slots come standard:

- Slot 1 - FL/FH x4 PCIe 3.0 (x8 connector)
- Slot 2 - HL/FH x8 PCIe 3.0 (x16 connector)
- Slot 3 - HL/FH x8 PCIe 3.0 (x8 connector)
- Slot 4 - Low Profile x4 PCIe 2.0 (x8 connector)
- Additional Slots may be added via selections from the PCI Information and

Options subsection
System Fans - 4 (1 additional fan included with purchase of second processor)
Drive Cage - 12-LFF
USB - 4 Rear, 1 Front, 1 Internal, 1 SD slot
HP iLO Management Engine (standard)
NOTE: New options are available for Rack Rail Kits; these options are no longer standard on-board with this Model Part Number. Please see HP Rack Options below for optional required options.

HP ProLiant DL380e Gen8 25 SFF Configure-to-order Server 669256-B21
NOTE: This CTO server includes an "expander-based" storage backplane. A single Smart Array P420 is capable of controlling all 25 SFF drives and optional rear drives.

Factory Integrated Model ships with:

2 x HP Smart Socket Guides for fast processor installation.
12 DIMM slots for RDIMM, LRDIMM and UDIMM Memory installation
HP Ethernet 1Gb 4-port 366i Adapter
HP Dynamic Smart Array B120i Controller with Zero Memory (ZM)
I/O slots - 4 Slots come standard:

- Slot 1 - FL/FH x4 PCIe 3.0 (x8 connector)
- Slot 2 - HL/FH x8 PCIe 3.0 (x16 connector)
- Slot 3 - HL/FH x8 PCIe 3.0 (x8 connector)
- Slot 4 - Low Profile x4 PCIe 2.0 (x8 connector)
- Additional Slots may be added via selections from the PCI Information and

Options subsection
System Fans - 4 (1 additional fans included with purchase of second processor)
Drive Cage - 25-SFF (Optical media drive optional)
USB - 4 Rear, 1 Front, 1 Internal, 1 SD slot
HP iLO Management Engine (standard)
NOTE: New options are available for Rack Rail Kits; these options are no longer standard on-board with this Model Part Number. Please see HP Rack Options below for optional required options.

HP ProLiant DL380e Gen8 8 LFF Configure-to-order Server 669255-B21
NOTE: This CTO server supports 4, 6, and 8LFF drive configurations based on the selection of controller. The HP Dynamic Smart Array B120i is capable of controlling up to 6 SATA drives. Greater than 4 SATA drives require the use of an option cable, p/n 675856-B21). Greater than 6 SATA drives require an HP Dynamic Smart Array B320i or

P420 or greater controller.

Factory Integrated Model ships with:

2 x HP Smart Socket Guides for fast processor installation.
12 DIMM slots for RDIMM, LRDIMM and UDIMM Memory installation
HP Ethernet 1Gb 4-port 366i Adapter
HP Dynamic Smart Array B120i Controller with Zero Memory (ZM)
I/O slots - 4 Slots come standard:

- Slot 1 - FL/FH x4 PCIe 3.0 (x8 connector)
- Slot 2 - HL/FH x8 PCIe 3.0 (x16 connector)
- Slot 3 - HL/FH x8 PCIe 3.0 (x8 connector)
- Slot 4 - Low Profile x4 PCIe 2.0 (x8 connector)
- Additional Slots may be added via selections from the PCI Information and

Options subsection
System Fans - 4 (one additional fan included with purchase of second processor)
Drive Cage - 8-LFF (Optical media drive optional)
USB - 4 Rear, 2 Front, 1 Internal, 1 SD slot
HP iLO Management Engine (standard)
NOTE: New options are available for Rack Rail Kits; these options are no longer standard on-board with this Model Part Number. Please see HP Rack Options below for optional required options.

HP ProLiant DL380e Gen8 8 SFF Configure-to-order Server 669253-B21
NOTE: This CTO server supports up to 8SFF drives and is expandable up to 16 SFF drives via the optional 8SFF upgrade kit (p/n 668295-B21).

Factory Integrated Model ships with:

2 x HP Smart Socket Guides for fast processor installation.
12 DIMM slots for RDIMM, LRDIMM and UDIMM Memory installation
HP Ethernet 1Gb 4-port 366i Adapter
HP Dynamic Smart Array B120i Controller with Zero Memory (ZM)
I/O slots - 4 Slots ship standard:

- Slot 1 - FL/FH x4 PCIe 3.0 (x8 connector)
- Slot 2 - HL/FH x8 PCIe 3.0 (x16 connector)
- Slot 3 - HL/FH x8 PCIe 3.0 (x8 connector)
- Slot 4 - Low Profile x4 PCIe 2.0 (x8 connector)
- Additional Slots may be added via selections from the PCI Information and

Options subsection
System Fans - 4 (one additional fan included with purchase of second processor)
Drive Cage - 8-SFF (Optical media drive optional)
USB - 4 Rear, 2 Front, 1 Internal, 1 SD slot
HP iLO Management Engine (standard)
NOTE: New options are available for Rack Rail Kits; these options are no longer standard on-board with this Model Part Number. Please see HP Rack Options below for optional required options.

Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

HP Processors	**NOTE:** If two processors are desired, select one xxxxxx-L21 and one xxxxxx-B21	
	Entry Processors	
	NOTE: All support up to 1066MHz memory speeds.	
	HP DL380e Gen8 Intel® Xeon® E5-2407 (2.2GHz/4-core/10MB/80W) FIO Processor Kit	661132-L21
	HP DL380e Gen8 Intel® Xeon® E5-2403 (1.8GHz/4-core/10MB/80W) FIO Processor Kit	661134-L21
	Base Processors	
	NOTE: All support up to1333MHz DDR3 memory speeds.	
	HP DL380e Gen8 Intel® Xeon® E5-2440 (2.4GHz/6-core/15MB/95W) FIO Processor Kit	661124-L21
	HP DL380e Gen8 Intel® Xeon® E5-2430 (2.2GHz/6-core/15MB/95W) FIO Processor Kit	661126-L21
	HP DL380e Gen8 Intel® Xeon® E5-2430L (2.0GHz/6-core/15MB/60W) FIO Processor Kit	661138-L21
	HP DL380e Gen8 Intel® Xeon® E5-2420 (1.9GHz/6-core/15MB/95W) FIO Processor Kit	661128-L21
	Performance Processors	
	NOTE: All support up to 1600MHz DDR3 memory speeds	
	HP DL380e Gen8 Intel® Xeon® E5-2470 (2.3GHz/8-core/20MB/95W) FIO Processor Kit	661118-L21
	HP DL380e Gen8 Intel® Xeon® E5-2450 (2.1GHz/8-core/20MB/95W) FIO Processor Kit	661120-L21
	HP DL380e Gen8 Intel® Xeon® E5-2450L (1.8GHz/8-core/20MB/70W) FIO Processor Kit	661136-L21
HP Memory	**NOTE:** To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html (Worldwide)	
	NOTE: HP memory from previous generation servers are not fully compatible with Smart Memory features in Gen8 Servers.	
	Registered DIMMs (RDIMMs)	
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647895-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647897-B21
	HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647899-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	690802-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647901-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672631-B21
	Unbuffered with ECC DIMMs (UDIMMs)	
	HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669320-B21

	HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647905-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669322-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647907-B21
	HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669324-B21
	HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647909-B21
	Load Reduced DIMMs (LRDIMMs)	
	HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647903-B21
	NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator. **NOTE:** PC3L is a low voltage memory. **NOTE:** Depending on the memory configuration and processor model, 1600MHz and 1333MHz memory may operate at a lower speed. Please see the see the "Memory" section later in this document and the Online Memory Configuration Tool for details at www.hp.com/go/ddr3memory-configurator.	
HP Power Supplies	**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies inside a server must be exactly the same model. Mixing Gold, Platinum, and Platinum Plus certified power supplies is not supported. **NOTE:** Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.	
	HP Common Slot Platinum Plus Power Supply Kits **NOTE:** The following Power Supplies offer up to 94% Efficiency support for Intelligent Power Discovery.	
	HP 460W Common Slot Platinum Plus Hot Plug Power Supply Kit	656362-B21
	HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit	656363-B21
	HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit	656364-B21
	HP Common Slot Gold Power Supplies **NOTE:** The following Power Supplies offer 92% Efficiency.	
	HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
	HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21
	HP Common Slot -48VDC Power Supplies **NOTE:** The following Power Supplies offer 92% Efficiency.	
	HP 750W Common Slot -48VDC Hot Plug Power Supply Kit	636673-B21
	NOTE: The HP 750W Common Slot -48VDC power supply does not ship with a power cable. It has been designed with a terminal block connection allowing for custom design of power cords by the user.	
	NOTE: Option Kits for AC power supplies include the power supply and one PDU IEC cable.	

	NOTE: HP ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HP power cords please go to www.hp.com/products/powercords	
HP I/O Expansion Options	HP DL380e Gen8 CPU1 with SAS Support FIO Riser Kit	661402-B21
	NOTE: If selected with HP DL380e Gen8 8LFF CTO Chassis, HP DL380eGen8 8LFF Mini SAS FIO Kit is required. This option can only be selected for HP DL380e Gen8 8LFF CTO Chassis, HP DL380e Gen8 8SFF CTO Chassis, or HP DL380e Gen8 12LFF 1:1 CTO Chassis. **NOTE:** Includes HP Dynamic Smart Array B320i controller **NOTE:** SAS license key (PN BC393A) is selected by default when this riser kit is selected. If SAS support is not needed, SAS license key (PN BC393A) can be deselected. SAS license key is mandatory for SAS support. Supports up to 8 drives.	
	HP DL380e Gen8 CPU1 Riser Kit	661404-B21

Step 3: Choose Additional Factory Integratable Options (only one of the following from each list unless otherwise noted)

HP Cable Options	HP DL380e Gen8 8 LFF FIO Mini SAS Kit	675160-B21
HP Rack Kits	**NOTE:** The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.	
	HP 2U Friction Gen8 Rail FIO Kit	663476-B21
HP Insight Software	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	C6N36A

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Core Options and Additional Options" section below.

Core Options

NOTE: Some options may not be integrated at the factory. Contact your local sales representative for additional information.

HP Unique Options	HP DL380e Gen8 Hot Plug Fan Kit **NOTE:** Upgrades a non-redundant server with additional hot-plug fans.	667855-B21
	HP DL380e Gen8 8 Small Form Factor (SFF) Hard Drive Cage Kit **NOTE:** With upgrade of 8SFF Cage, there is no Optical Drive support and an additional storage controller is required for 1:1 CTO Server.	668295-B21
	HP DL380e Gen8 CPU1 Riser Kit	661404-B21
	HP DL380e Gen8 x16 PCI-E Riser Kit	661628-B21
	HP Graphic Card Power Adapter Kit **NOTE:** The adapter kit is used to provide power to high-wattage cards (example: graphics cards) that require up to 225W of power. **NOTE:** High wattage cards are supported on the x16 FL/FH slot which is controlled by the second processor. p/n 661628-b21 is required. **NOTE:** Because of a single x16 FL/FH slot, we support only one of the below graphic cards at a time.	663282-B21
HP Processors	**Entry Processors** **NOTE:** All support up to 1066MHz memory speeds.	
	HP DL380e Gen8 Intel® Xeon® E5-2407 (2.2GHz/4-core/10MB/80W) Processor Kit	661132-B21
	HP DL380e Gen8 Intel® Xeon® E5-2403 (1.8GHz/4-core/10MB/80W) Processor Kit	661134-B21
	Base Processors **NOTE:** All support up to1333MHz DDR3 memory speeds.	
	HP DL380e Gen8 Intel® Xeon® E5-2440 (2.4GHz/6-core/15MB/95W) Processor Kit	661124-B21
	HP DL380e Gen8 Intel® Xeon® E5-2430 (2.2GHz/6-core/15MB/95W) Processor Kit	661126-B21
	HP DL380e Gen8 Intel® Xeon® E5-2430L (2.0GHz/6-core/15MB/60W) Processor Kit	661138-B21
	HP DL380e Gen8 Intel® Xeon® E5-2420 (1.9GHz/6-core/15MB/95W) Processor Kit	661128-B21
	Performance Processors **NOTE:** All support up to 1600MHz DDR3 memory speeds.	
	HP DL380e Gen8 Intel® Xeon® E5-2470 (2.3GHz/8-core/20MB/95W) Processor Kit	661118-B21
	HP DL380e Gen8 Intel® Xeon® E5-2450 (2.1GHz/8-core/20MB/95W) Processor Kit	661120-B21
	HP DL380e Gen8 Intel® Xeon® E5-2450L (1.8GHz/8-core/20MB/70W) Processor Kit	661136-B21
	NOTE: Up to 2 processors supported. **NOTE:** HT indicates that the processor model supports Intel® /Hyper-Threading Technology **NOTE:** Turbo2: Intel® Turbo Boost Technology 2.0 provides more computing power when you need it with performance that adapts to spikes in your workload and delivers more performance upside than then previous generation turbo technology. **NOTE:** DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed. **NOTE:** For the Intel® C600 Chipset E5-2400 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2400x v#, 2 = number of CPUs in a Node, 4 is socket/segment designation, 00 = Processor SKU, x = L for low power SKUs and v#(not yet designated) = version number.	

HP Memory

NOTE: To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html (Worldwide)
NOTE: HP memory from previous generation servers are not fully compatible with Smart Memory features in Gen8 Servers.

Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647895-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647897-B21
HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647899-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	690802-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647901-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672631-B21

Unbuffered with ECC DIMMs (UDIMMs)

HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669320-B21
HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647905-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669322-B21
HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647907-B21
HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669324-B21
HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647909-B21

Load Reduced DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647903-B21

NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.
NOTE: PC3L is a low voltage memory.

Core Options

HP Optical Drives	HP 12.7mm Slim SATA DVD-ROM JackBlack Optical Drive	652232-B21
	HP 12.7mm Slim SATA DVD-RW JackBlack Optical Drive	652235-B21

HP Hard Drives

NOTE: The HP ProLiant DL380e Gen8 Smart Storage solutions are equipped with entirely re-designed Small Form Factor (SFF 2.5 in) and Large Form Factor (LFF 3.5 in) hot plug carriers for HP Qualified Hard Drives and Solid State Drives. These new carriers provide status and activity indicators as well as caution indicators for "Do Not Remove".
NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.
NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

SAS Hot Plug with SmartDrive SFF (2.5-inch) Enterprise Drives	
HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	697574-B21
HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652589-B21
HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652583-B21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652572-B21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652564-B21
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652611-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652605-B21
SAS Hot Plug SmartDrive SFF (2.5-inch) Midline Drives	
HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652749-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652745-B21
SAS Hot Plug SmartDrive LFF (3.5-inch) Enterprise Drives	
HP 600GB 6G SAS 15K rpm LFF (3.5-inch) SC Enterprise 3yr Warranty Hard Drive	652620-B21
HP 450GB 6G SAS 15K rpm LFF (3.5-inch) SC Enterprise 3yr Warranty Hard Drive	652615-B21
SAS Hot Plug SmartDrive LFF (3.5-inch) Midline Drives	
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652766-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652757-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652753-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html (Worldwide)

6G SATA Hot Plug with SmartDrive SFF (2.5-inch) Midline (MDL) Drives	
HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655710-B21
HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655708-B21
6G SATA Hot Plug with SmartDrive LFF (3.5-inch) Midline (MDL) Drives	
HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	693687-B21
HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	628061-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658079-B21

HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	657750-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658071-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html (Worldwide)	
6G SATA ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives	
HP 800GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691868-B21
HP 400GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691866-B21
HP 200GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691864-B21
HP 100GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691862-B21
6G SATA ME Hot Plug SFF (3.5-inch) Enterprise Mainstream Solid State Drives	
HP 800GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691860-B21
HP 400GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691856-B21
HP 200GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691854-B21
HP 100GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691852-B21
6G SAS ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives	
HP 800GB 6G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	690829-B21
HP 400GB 6G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	690827-B21
HP 200GB 6G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	690825-B21
6G SAS SLC Hot Plug SFF (2.5-inch) Enterprise Performance Solid State Drives	
HP 400GB 6G SAS SLC SFF (2.5-inch) SC Enterprise Performance 3yr Warranty Solid State Drive	653082-B21
HP 200GB 6G SAS SLC SFF (2.5-inch) SC Enterprise Performance 3yr Warranty Solid State Drive	653078-B21
3G SATA MLC Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives	
HP 400GB 3G SATA MLC SFF (2.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653120-B21
HP 200GB 3G SATA MLC SFF (2.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653118-B21
HP 100GB 3G SATA MLC SFF (2.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653112-B21
3G SATA MLC Hot Plug LFF (3.5-inch) Enterprise Mainstream Solid State Drives	

Core Options

HP 400GB 3G SATA MLC LFF (3.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653126-B21
HP 200GB 3G SATA MLC LFF (3.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653124-B21
HP 100GB 3G SATA MLC LFF (3.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653122-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14038_div/14038_div.html (Worldwide)	
Hard Drive Kits	
NOTE: All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.	
HP LFF Gen8 Hard Drive Blank Kit	666986-B21
HP SFF Gen8 Hard Drive Blank Kit	666987-B21
HP 2U Gen8 2 LFF Rear Kit **NOTE:** Supports 2 hot plug drives in the back of server and the kit includes multiple cable options which allow connections between rear, front backplanes and also between rear backplane, motherboard.	663278-B21
HP 2U Gen8 2 SFF Rear Kit **NOTE:** Supports 2 hot plug drives in the back of server and the kit includes multiple cable options which allow connections between rear, front backplanes and also between rear backplane, motherboard.	663280-B21
HP DL380e Gen8 8 Small Form Factor (SFF) Hard Drive Cage Kit **NOTE:** Provides support for an additional 8 SFF drives. Requires a separate controller. HP recommends the Smart Array P420 controller with 1Gb of FBWC.	668295-B21
Hard Drive Cables	
HP Gen8 2-port SATA Cable Kit **NOTE:** This cable allows the customer to upgrade their B120i-based configuration to support up to 6 LFF SATA drives.	675856-B21

Core Options

HP Networking	**Gigabit Ethernet adapters**	
	HP NC112T PCI Express Gigabit Server Adapter	503746-B21
	HP NC365T 4-port Ethernet Server Adapter	593722-B21
	HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
	HP Ethernet 1Gb 2-port 332T Adapter	615732-B21
	HP Ethernet 1Gb 2-port 361T Adapter	652497-B21
	10 Gigabit Ethernet Adapters **NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each adapter. **NOTE:** Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.	
	HP NC523SFP 10Gb 2-port Server Adapter	593717-B21
	HP Ethernet 10Gb 2-port 530SFP Adapter	652503-B21
	HP Ethernet 10Gb 2-port 530T Adapter	656596-B21
	HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
	HP NC552SFP 10Gb 2-port Ethernet Server Adapter	614203-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs	
HP InfiniBand	QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA	583211-B21
	HP InfiniBand 4X QDR ConnectX-2 PCIe G2 Dual Port HCA	592520-B21
	HP InfiniBand FDR/EN 10/40Gb Dual Port 544QSFP Adapter	649281-B21
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13078_div/13078_div.html	
HP I/O Expansion Options	HP DL380e Gen8 CPU1 Riser Kit **NOTE:** This kit provides three slots that run off of first processor.	661404-B21
	HP DL380e Gen8 x16 PCI-E Riser Kit **NOTE:** This kit provides two additional slots that run off of second processor.	661628-B21

Core Options

HP Power Supplies

NOTE: Mixing of power supplies in the same server is not supported. All power supplies inside a server must be exactly the same model. Mixing Gold, Platinum, and Platinum Plus certified power supplies is not supported.

NOTE: Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.

HP Common Slot Platinum Plus Power Supply Kits

NOTE: The following Power Supplies offer 94% Efficiency with support for Intelligent Power Discovery.

HP 460W Common Slot Platinum Plus Hot Plug Power Supply Kit	656362-B21
HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit	656363-B21
HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit	656364-B21

HP Common Slot Gold Power Supplies

NOTE: The following Power Supplies offer 92% Efficiency.

HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21

HP Common Slot -48VDC Power Supplies

NOTE: The following Power Supplies offer 92% Efficiency.

HP 750W Common Slot -48VDC Hot Plug Power Supply Kit	636673-B21

NOTE: The HP 750W Common Slot -48VDC power supply does not ship with a power cable. It has been designed with a terminal block connection allowing for custom design of power cords by the user.

NOTE: Option Kits contain optional power supply, an IEC power cable and PDU IEC cables.

NOTE: HP ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HP power cords please go to www.hp.com/products/powercords

NOTE: Power Specification and Technical Content for supported power supplies can be found at:
http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html

Core Options

HP Graphic Options	HP Graphic Card Power Adapter Kit **NOTE:** The adapter kit is used to provide power to high-wattage cards (example: graphics cards) that require up to 225W of power. **NOTE:** High wattage cards are supported on the x16 FL/FH slot which is controlled by the second processor. p/n 661628-b21 is required. **NOTE:** Because of a single x16 FL/FH slot, we support only one of the below graphic cards at a time.	663282-B21
	NVIDIA Quadro 4000 2GB PCI-E Adapter **NOTE:** Only the following OS types are supported: 64-bit Only: Red Hat Enterprise Linux 5.x, Red Hat Enterprise Linux 6.x, SUSE Linux Enterprise Server 11 SPx. 64-bit Only: Windows Server 2008 R2 SPx.	655933-B21
	NVIDIA Quadro 6000 6GB PCI-E Adapter **NOTE:** Only the following OS types are supported: 64-bit Only: Red Hat Enterprise Linux 5.x, Red Hat Enterprise Linux 6.x, SUSE Linux Enterprise Server 11 SPx. 64-bit Only: Windows Server 2008 R2 SPx.	655935-B21
HP Cooling Options	HP DL380e Gen8 Hot Plug Fan Kit **NOTE:** This kit contains a single fan and is used to upgrade non-redundant configurations to redundant configurations.	667855-B21

Additional Options

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

HP Insight Software	**HP Insight Control**	
	HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License	C6N27A
	HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License	C6N28AAE
	HP Insight Control Server Provisioning Media Kit	BD883A
	HP Insight Management Media Kit	C6N31A
	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Electronic License	C6N36AAE
	HP Insight Control Server Deployment including 1yr 24x7 Support Electronic License	T9082AAE
	HP Insight Control Server Deployment including 1yr 24x7 Support Single Server License	452151-B21
	NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key. **NOTE:** Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. **NOTE:** Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates. **NOTE:** For additional license options please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html	
	HP Integrated Lights-Out (iLO)	
	HP Integrated Lights-Out (iLO) Advanced for ProLiant	
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License	TA850AAE
	HP iLO Advanced Electronic License with 3yr 24x7 Tech Support and Updates	BD506AAE
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21
	HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates	BD505A
	HP iLO Essentials	
	HP Integrated Lights-Out Essentials including 3yr 24x7 Tech Support and Updates E-LTU	BD774AAE
	HP Integrated Lights-Out Essentials including 3yr 24x7 Tech Support and Updates Single Svr License	BD774A
	HP Integrated Lights-Out Essentials including 1yr 24x7 Tech Support and Updates E-LTU	BD775AAE
	HP Integrated Lights-Out Essentials including 1yr 24x7 Tech Support and Updates Single Svr License	BD775A
	NOTE: For additional license options please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/14276_div/14276_div.html **NOTE:** For more information, visit: http://www.hp.com/go/ilo.	

Additional Options

High Performance Clusters	**HP Cluster Management Utility**	
	HP Insight Cluster Management Utility 1yr 24x7 Flexible License	QL803B
	HP Insight Cluster Management Utility 3yr 24x7 Flexible License	BD476A
	NOTE: These part numbers can be used to purchase one certificate for multiple licenses and support with a single activation key. Each license is for one node (server). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key. Customer also will receive a support agreement.	
	HP Insight Cluster Management Utility Media	BD477A
	NOTE: For additional license kits please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html	
	HP HPC Linux Value Pack	
	HP High Performance Computing Linux Value Pack 1 Processor Flexible License for ProLiant Servers **NOTE:** This part number can be used to purchase one certificate for multiple licenses with a single activation key. Each license is for one socket (a.k.a. processor). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key.	TC293B
	HP High Performance Computing Linux Value Pack Media Kit for ProLiant Servers **NOTE:** This part number can be used to purchase media including software and documentation, which will be delivered to the customer.	TC294A
	NOTE: For additional license kits please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/13485_div/13485_div.html	

HP I/O Accelerator Options	**Second Generation Accelerators**	
	HP 365GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673642-B21
	HP 785GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673644-B21
	HP 1205GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673646-B21
	HP 2410GB Multi Level Cell G2 PCIe ioDrive2 Duo for ProLiant Servers	673648-B21
	HP 3TB G2 FH/HL PCIe ioDrive2 IO Accelerator for ProLiant Servers	721458-B21
	First Generation Accelerators	
	HP 160GB Single Level Cell PCIe ioDrive for ProLiant Servers **NOTE:** A low-profile PCI bracket is included for use in low-profile slots.	600278-B21
	HP 320GB Single Level Cell PCIe ioDrive Duo for ProLiant Servers	600281-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13587_div/13587_div.html (Worldwide)	

Additional Options

HP Security	HP Trusted Platform Module Option **NOTE:** The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: www.hp.com/go/TPM. **NOTE:** ProLiant OS pre-installed units will come with the partition required for TPM deployment. **NOTE:** The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.	488069-B21
	HP 2U Security Bezel Kit	666988-B21
HP Storage Controllers	**SAS Controllers**	
	Smart Array P222 Controller	
	HP Smart Array P222/512 FBWC 6Gb 1-port Int/1-port Ext SAS Controller	631667-B21
	Smart Array P420 Controller	
	HP Smart Array P420/1GB FBWC 6Gb 2-ports Int SAS Controller	631670-B21
	HP Smart Array P420/2GB FBWC 6Gb 2-ports Int SAS Controller	631671-B21
	Smart Array P421 Controller	
	HP Smart Array P421/1GB FBWC 6Gb 2-ports Ext SAS Controller	631673-B21
	HP Smart Array P421/2GB FBWC 6Gb 2-ports Ext SAS Controller	631674-B21
	Smart Array P822 Controller	
	HP Smart Array P822/2GB FBWC 2-ports Int/4-ports Ext SAS Controller	615418-B21
	Optional Upgrades	
	HP 2GB P-series Smart Array Flash Backed Write Cache	631681-B21
	HP 512MB B-series 36 inch Dynamic Smart Array Flash Backed Write Cache for ML/DL **NOTE:** This kit includes a cable and cache module that is used in conjunction with the B320i controller.	631922-B21
	HP Smart Array Advanced Pack 2.0 No Media 1 Server 1yr 24x7 Support Software	BC377A
	HP Smart Array Advanced Pack 2.0 No Media Electronic Lic 1yr 24x7 Support Software	BC390AAE
	HP SAS License Key No Media 1 Single Server License for B320i	BC393A
	HP DL380e Gen8 Smart Array Cable Kit	672250-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14227_div/14227_div.html (Smart Array P222 Controller) http://h18000.www1.hp.com/products/quickspecs/14228_div/14228_div.html (Smart Array P420 Controller) http://h18000.www1.hp.com/products/quickspecs/14229_div/14229_div.html (Smart Array P421 Controller)	

Additional Options

	http://h18000.www1.hp.com/products/quickspecs/14341_div/14341_div.html (Smart Array P822 Controller) http://h18000.www1.hp.com/products/quickspecs/13200_div/13200_div.html (Smart Array Advanced Pack) http://h18000.www1.hp.com/products/quickspecs/14343_div/14343_div.html (Dynamic Smart Array Controllers)	
	Host Bus Adapter	
	HP H220 Host Bus Adapter	650933-B21
	HP H221 Host Bus Adapter	650931-B21
	HP H222 Host Bus Adapter	650926-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18004.www1.hp.com/products/quickspecs/14336_div/14336_div.html (HBA 220) http://h18004.www1.hp.com/products/quickspecs/14222_div/14222_div.html (HBA 221) http://h18004.www1.hp.com/products/quickspecs/14337_div/14337_div.html (HBA 222)	
	SCSI HBA	
	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21
	NOTE: Please see the following QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html (SC11Xe HBA)	
HP Power Cords	**NOTE:** HP ProLiant servers ships with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs).	
	HP C13 - SEV 1011 CH 250V 10Amp 1.83m Power Cord	AF565A
	HP C13 - DK-2.5A DK 250V 10Amp 1.83m Power Cord	AF566A
	HP C13 - CEE-VII EU 250V 10Amp 1.83m Power Cord	AF568A
	HP C13 - BS-1363A UK/HK/SG 250V 10Amp 1.83m Power Cord	AF570A
	HP C13 - CEI-23-50 IT/CL 250V 10Amp 1.83m Power Cord	AF571A
	HP C13 - SABS-164 ZA 250V 10Amp 2.5m Power Cord	AF567A
	HP C13 - Nema 6-15P US 250V 15A JP 3.6m Power Cord	A0N33A
	HP C13 - Nema 5-15P US/CA 110V 10Amp 1.83m Power Cord	AF556A
HP Cable Options	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable	QK735A
	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable	QK733A
	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable	QK736A
	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable	QK737A
	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable	QK734A

Additional Options

HP Tape Backup

NOTE: For the complete range of tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP tape backup products see: http://www.hp.com/storage/SPOCK and www.hp.com/go/ebs.
NOTE: For Internal drives to be connected to DL servers please make sure that you order rack mount kit as well.

HP StoreEver 1U USB Rack-mount Kit	A8007B
HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit	C0L99A
HP StoreEver LTO-6 Ultrium 6650 Internal Tape Drive	EH963A
HP StoreEver LTO-6 Ultrium 6650 External Tape Drive	EH964A
HP StoreEver LTO-6 Ultrium 6250 Internal Tape Drive	EH969A
HP StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A

HP Disk Backup

NOTE: For the complete range of RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP disk backup products see: http://www.hp.com/storage/SPOCK.

HP StoreOnce Backup systems

HP StoreOnce 2620 iSCSI Backup	BB852A

HP Storage Options

Storage Fibre Channel HBA
NOTE: For the complete listing of Fibre Channel Host Bus Adapters for Windows 2000, Windows Server 2003 and Linux, please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html

Brocade Fibre Channel HBAs

HP 81B 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AP769B
HP 82B 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AP770B

Emulex Fibre Channel HBAs

HP 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AJ762B
HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ763B
HP SN1000E 16Gb 1-port PCIe Fibre Channel Host Bus Adapter	QR558A
HP SN1000E 16Gb 2-port PCIe Fibre Channel Host Bus Adapter	QR559A

QLogic Fibre Channel HBAs

HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AK344A
HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ764A
HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter	QW971A
HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter	QW972A

Converged Network Adapter

HP CN1100E Dual Port Converged Network Adapter	BK835A
HP CN1000Q Dual Port Converged Network Adapter	BS668A

Additional Options

HP Uninterruptible Power Systems	**HP Rack-mountable UPS**	
	HP R1500 G3 Uninterruptible Power Supply (UPS)	
	HP R1.5kVA G3 1U INTL Uninterruptible Power System	AF471A
	HP R1.5kVA G3 1U JP/TW Uninterruptible Power System	AF470A
	HP R1.5kVA G3 1U NA Uninterruptible Power System	AF469A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14059_div/14059_div.html (Worldwide)	
	HP R/T3000 G2 Uninterruptible Power System (UPS)	
	HP R/T3000 G2 2U Detachable Cord High Voltage INTL Uninterruptible Power System	AF468A
	HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System	AF466A
	HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System	AF467A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14058_div/14058_div.html (Worldwide)	
	R5000 Uninterruptible Power System (UPS)	
	HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System	AF461A
	HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14109_div/14109_div.html (Worldwide)	
	R7000 Uninterruptible Power System (UPS)	
	HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A
	HP R7KVA 4U IEC-32A High Voltage INTL Uninterruptible Power System	AF463A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14110_div/14110_div.html (Worldwide)	
	NOTE: For additional information on sizing your HP UPS, please reference: http://www.upssizer.com	
	NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.	
	NOTE: For additional information on HP Uninterruptible Power Systems please go to: www.hp.com/servers/rackups.	

Additional Options

HP Power Distribution Units	**Monitored PDUs**	
	HP Monitored Power Distribution Unit: Full Rack Version	
	HP 8.6kVA 24A Single Input Three Phase NA/JP Monitored Power Distribution Unit	AF504A
	HP 8.3kVA 40A Single Input Single Phase NA/JP Monitored Power Distribution Unit	AF506A
	HP 11kVA 16A Single Input Three Phase INTL Monitored Power Distribution Unit	AF508A
	HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit	AF510A
	HP Monitored Power Distribution Unit: Half Rack Version	
	HP 4.9kVA 24A Single Input Single Phase NA/JP Monitored Power Distribution Unit	AF914A
	HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit	AF915A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12118_div/12118_div.html	
	Modular PDUs 1U/0U	
	NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 G2 and 9000 series racks).	
	HP 3.6kVA 16A High Voltage INTL Modular Power Distribution Unit	252663-B24
	HP 4.9kVA 24A High Voltage NA/JP Modular Power Distribution Unit	252663-D72
	HP 2.8kVA 24A Low Voltage NA/JP Modular Power Distribution Unit	252663-D71
	HP 8.3kVA 40A High Voltage NA/JP Modular Power Distribution Unit	252663-D73
	HP 7.3kVA 32A High Voltage INTL Modular Power Distribution Unit	252663-B31
	NOTE: For additional information on HP Power Distribution Units including accessories please go to: www.hp.com/go/pdu. **NOTE:** Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords. **NOTE:** This PDU has a detachable input power cord and allows for adaptability to country specific power requirements. **NOTE:** Please see the following QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html (Worldwide)	

Additional Options

HP Intelligent Power Distribution Units (iPDU)

iPDU Core Units

HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit	AF525A
HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF526A

iPDU Extension Bars

HP 5xC13 Intelligent PDU Extension Bar G2 Kit	AF547A
HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar	AF528A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13650_div/13650_div.html (Worldwide)

HP Rack Series

HP Intelligent Series Rack

HP 636 1075mm Pallet Intelligent Series Rack	BW895A
HP 636 1075mm Shock Intelligent Series Rack	BW896A
HP 642 1075mm Pallet Intelligent Series Rack	BW903A
HP 642 1075mm Shock Intelligent Series Rack	BW904A
HP 647 1075mm Pallet Intelligent Series Rack	BW911A
HP 647 1075mm Shock Intelligent Series Rack	BW912A

NOTE: Please see the QuickSpecs for Technical Specifications such as height, width, depth, weight, and color:
http://h18000.www1.hp.com/products/quickspecs/14223_div/14223_div.html (Worldwide)
NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.

HP Rack Options

HP Location Discovery Services

HP 36U Location Discovery Kit	BW945A
HP 42U Location Discovery Kit	BW946A
HP 47U Location Discovery Kit	BW947A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/14429_div/14429_div.html (Worldwide)

HP USB Keyboard and Mouse

HP USB BFR with PVC Free US Keyboard/Mouse Kit	631341-B21
HP USB BFR with PVC Free UK Keyboard/Mouse Kit	631344-B21
HP USB BFR with PVC Free FR Keyboard/Mouse Kit	631346-B21
HP USB BFR with PVC Free ES Keyboard/Mouse Kit	631348-B21
HP USB BFR with PVC Free DE Keyboard/Mouse Kit	631358-B21
HP USB BFR with PVC Free JP Keyboard/Mouse Kit	631360-B21

HP USB BFR with PVC Free IT Keyboard/Mouse Kit	631362-B21
HP USB BFR with PVC Free CN Keyboard/Mouse Kit	631364-B21
HP USB BFR with PVC Free AE Keyboard/Mouse Kit	638212-B21
HP USB BFR with PVC Free RU Keyboard/Mouse Kit	638214-B21
HP USB BFR with PVC Free AP-Intl Keyboard/Mouse Kit	672097-373
HP USB BFR with PVC Free Intl Keyboard/Mouse Kit	672097-B33
HP USB BFR with PVC Free PT Keyboard/Mouse Kit	672097-133
HP USB BFR with PVC Free TR Keyboard/Mouse Kit	672097-143
HP USB BFR with PVC Free CZ Keyboard/Mouse Kit	672097-223
HP USB BFR with PVC Free FI Keyboard/Mouse Kit	672097-353
HP USB BFR with PVC Free SE Keyboard/Mouse Kit	672097-103
HP USB BFR with PVC Free CH Keyboard/Mouse Kit	672097-113
HP USB BFR with PVC Free KR Keyboard/Mouse Kit	672097-KD3
HP USB BFR with PVC Free IN Keyboard/Mouse Kit	672097-D63

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13972_div/13972_div.html (Worldwide)

HP TFT7600 G2 KVM Console Rackmount Keyboard Monitor

HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor	AZ870A
HP TFT7600 G2 KVM Console Rackmount Keyboard UK Monitor	AZ871A
HP TFT7600 G2 KVM Console Rackmount Keyboard DE Monitor	AZ872A
HP TFT7600 G2 KVM Console Rackmount Keyboard FR Monitor	AZ873A
HP TFT7600 G2 KVM Console Rackmount Keyboard IT Monitor	AZ874A
HP TFT7600 G2 KVM Console Rackmount Keyboard ES Monitor	AZ875A
HP TFT7600 G2 KVM Console Rackmount Keyboard DK Monitor	AZ876A
HP TFT7600 G2 KVM Console Rackmount Keyboard NO Monitor	AZ877A
HP TFT7600 G2 KVM Console Rackmount Keyboard SE/FI Monitor	AZ878A
HP TFT7600 G2 KVM Console Rackmount Keyboard CH Monitor	AZ879A
HP TFT7600 G2 KVM Console Rackmount Keyboard PT Monitor	AZ880A
HP TFT7600 G2 KVM Console Rackmount Keyboard BE Monitor	AZ881A
HP TFT7600 G2 KVM Console Rackmount Keyboard JP Monitor	AZ882A
HP TFT7600 G2 KVM Console Rackmount Keyboard RU Monitor	AZ883A
HP TFT7600 G2 KVM Console Rackmount Keyboard Intl Monitor	AZ884A
HP TFT7600 G2 KVM Console Rackmount Keyboard US TAA Monitor	AZ885A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13731_div/13731_div.html (Worldwide)

HP Server Console Switches

HP Server Console 0x2x8 Port Analog Switch	AF616A
HP Server Console 0x2x16 Port Analog Switch	AF617A

Additional Options

HP TAA 0x2x16xKVM Server Console G2 Switch	AF626A
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11834_div/11834_div.html (Worldwide)	
HP Server Console Switch G2 with Virtual Media & CAC	
HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A
HP KVM CAT5 1-pack USB Interface Adapter	336047-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13475_div/13475_div.html (Worldwide)	
HP IP Console Switch G2 with Virtual Media & CAC	
HP 1x4 USB/PS2 KVM Console Switch	AF611A
HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13474_div/13474_div.html (Worldwide)	
Rail Kits	
NOTE: The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.	
HP 2U Large Form Factor Ball Bearing Gen8 Rail Kit **NOTE:** The 2U Ball bearing Rail Kit comes with ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.	663480-B21
HP 2U Small Form Factor Ball Bearing Gen8 Rail Kit **NOTE:** The 2U Ball bearing Rail Kit comes with ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.	663478-B21
HP Rack Cable Management Velcro Clips	379820-B21

Additional Options

HP USB and SD Options	HP 4GB SD Enterprise Performance Flash Media Kit **NOTE:** Blank SD media device is supported for use with VMware and Citrix. SD media must be installed in the internal slot of the ProLiant server. Learn more at: http://www.hp.com/go/proliantvirtualization.	580387-B21
	HP 2GB USB Flash Media Drive Key Kit **NOTE:** HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to HP VMware Getting Started Guide for installation instructions.	608447-B21
	HP 32GB SD Enterprise Mainstream Flash Media Kit	700136-B21
HP Care Pack Services	**Proactive Care** **NOTE:** Collaborative Support plus Proactive services delivered by the onshore, local language Advanced Solution Center (ASC), end-to-end case ownership from a Technical Solution Specialists and Technical Account Manager who remotely delivers firmware/software revision management, proactive scans and incident trend reports. Recommended for customers running a virtualized infrastructure and/or customers who desire an enhanced call support experience	
	HP 3 year 4 hour 24x7 ProLiant DL380e Proactive Care Service	U6E33E
	HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant DL380e Proactive Care Service	U6E34E
	HP 3 year 6 hour Call to Repair 24x7 ProLiant DL380e Proactive Care Service	U6E39E
	HP 3 year 6 hour Call to Repair 24x7 w/Defective Media Retention ProLiant DL380e Proactive Care Svc	U6E40E
	HP 3 year 4 hour 24x7 ProLiant DL380e with Insight Control Proactive Care Service	U6G61E
	HP 3 year 4 hour 24x7 w/Defective Media Retention DL380e with Insight Control Proactive Care Service	U6G62E
	HP 3 year 6 hour Call to Repair 24x7 ProLiant DL380e with Insight Control Proactive Care Service	U6G63E
	HP 3 yr 6hrCalltoRepair 24x7 w/Defective Media Retention DL380e w/Insight Control Proactive Care SVC	U6G64E
	Collaborative Support **NOTE:** Hardware break/fix plus 24x7 software diagnosis support with collaborative call management for a broad spectrum of 3rd Party software products including O/S and hypervisors. Recommended for customers procuring 3rd party SW O/S and hypervisors from the software vendors directly and deploying them on HP ProLiant servers.	
	HP 3 year 4 hour 24x7 ProLiant DL380e Collaborative Support	U6E31E
	HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant DL380e Collaborative Support	U6E32E
	HP 3 year 6 hour Call to Repair 24x7 ProLiant DL380e Collaborative Support	U6E37E
	HP 3 year 6 hour Call to Repair 24x7 w/Defective Media Retention ProLiant DL380e Collaborative Sup	U6E38E

Additional Options

Proactive Care Personalized Support Option

NOTE: To add an onsite Account Support Manager (ASM) to Proactive Care. ASM is an assigned resource who delivers support planning and brings technical expertise and best practices advices for the customer's environment.

HP 3yr Provides annual personalized proactive supp for existing Proactive Care ISS centric environmt	U6W98E

Installation Services

NOTE: Reduce the time required to get your system up and running and help minimize disruptions to your business.

HP Install ProLiant DL380e Service	U6E81E
HP Startup ProLiant DL380e Service	U6E83E

NOTE: For more information, customer/resellers can contact: http://www.hp.com/services/carepack

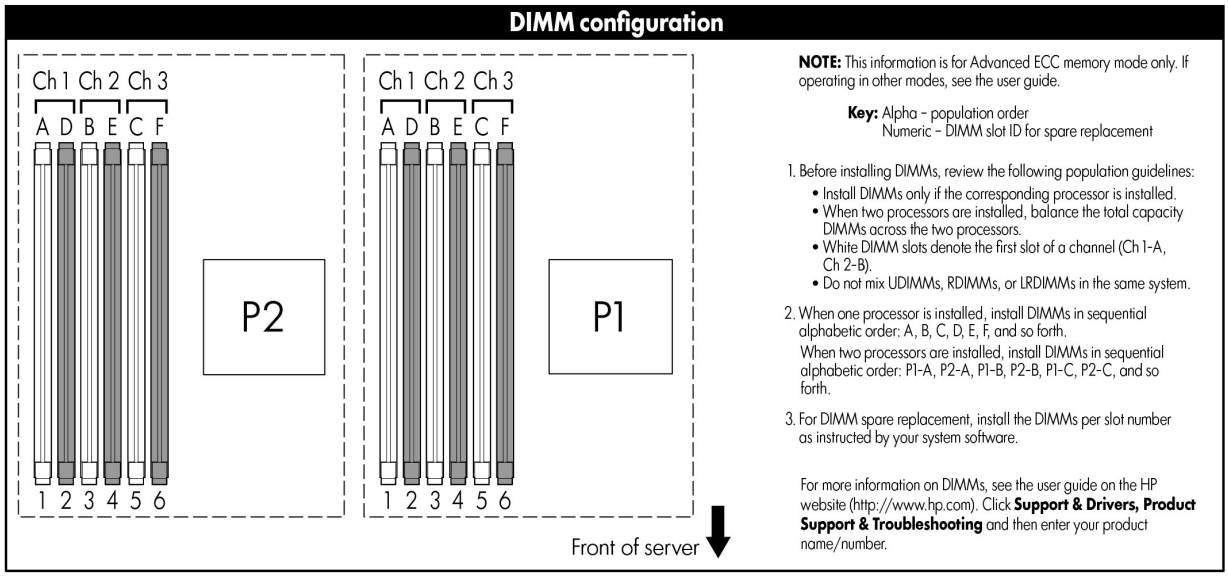
Memory

For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator

Memory Subsystem Architecture

Each Intel® Xeon® E5-2400 family processor socket contains three memory channels that support two DIMMs each for a total of six (6) DIMM per installed processor or a grand total of twelve (12) DIMMs for the server. Up to 32GB capacity DIMMs are supported for 384GB of memory (12 DIMM slots x 32GB per DIMM).

Memory population guidelines


DIMM configuration
Ch 1 Ch 2 Ch 3
A D B E C F
P2
1 2 3 4 5 6
Ch 1 Ch 2 Ch 3
A D B E C F
P1
1 2 3 4 5 6
Front of server
NOTE: This information is for Advanced ECC memory mode only. If operating in other modes, see the user guide.
Key: Alpha – population order
Numeric – DIMM slot ID for spare replacement
1. Before installing DIMMs, review the following population guidelines:
• Install DIMMs only if the corresponding processor is installed.
• When two processors are installed, balance the total capacity DIMMs across the two processors.
• White DIMM slots denote the first slot of a channel (Ch 1-A, Ch 2-B).
• Do not mix UDIMMs, RDIMMs, or LRDIMMs in the same system.
2. When one processor is installed, install DIMMs in sequential alphabetic order: A, B, C, D, E, F, and so forth.
When two processors are installed, install DIMMs in sequential alphabetic order: P1-A, P2-A, P1-B, P2-B, P1-C, P2-C, and so forth.
3. For DIMM spare replacement, install the DIMMs per slot number as instructed by your system software.
For more information on DIMMs, see the user guide on the HP website (http://www.hp.com). Click Support & Drivers, Product Support & Troubleshooting and then enter your product name/number.

General Memory Population Rules and Guidelines:

- White DIMM slots denote the first slot of a channel. For 1 DPC (DIMM per channel) populate white slots only.
- Install DIMMs only if the corresponding processor is installed.
- If only one processor is installed in a two processor system, only half of the DIMM slots are available.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors and to load the channels similarly whenever possible.
- Populate DIMMs from heaviest load (quad-rank) to lightest load (single-rank) within a channel. Heaviest load (DIMM with most ranks) within a channel goes furthest from the processor
- RDIMMs operating at either 1.35V or 1.5V may be mixed in any order, but the system will power them at the higher voltage.
- Do not mix RDIMMs, LRDIMMs, and UDIMMs.
- DIMMs of different speeds may be mixed in any order; the server will select a common optimal speed.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum memory capacity is a function of the memory type and number of installed processors.
- HP memory from previous generation servers is not qualified on the DL380e Gen8 Server. Certain HP SmartMemory features such as memory authentication and enhanced performance may not be supported.
- To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html.
- For memory population rules and additional memory guidelines, please see the DL380e Gen8 user guide at http://www.hp.com/support.

Memory

- There are three(3) Memory channels per processor; six(6) channels for 2 processors server.
- There are two(2) DIMM slots for each memory channel; twelve(12) total slots for 2 processors server.

Gen8 Supported Memory Bandwidth and Capacity										
DIMM Type	Registered DIMMS (RDIMMs)						Load Reduced (LRDIMMs)	Unbuffered with ECC DIMMs (UDIMMs)		
DIMM Rank	Single Rank (1R)			Dual Rank (2R)			Quad Rank (4R)	Single Rank (1R)	Dual Rank (2R)	
DIMM Capacity	4GB	4GB	8GB	8GB	16GB	16GB	32GB	2GB	4GB	8GB
DIMM Native Speed (MHz)	1333	1600	1600	1333	1333	1600	1333	1333	1333	1333
Voltage	LV	Std	Std	LV	LV	Std	LV	LV	LV	LV
SLOTS THAT CAN BE POPULATED										
12 slot servers	12	12	12	12	12	12	12	12	12	12
MAXIMUM CAPACITY (GB)[1]										
	48	48	96	96	192	192	384	24	48	96
POPULATED DIMM SPEED (MHz)										
1 DIMM Per Channel	1333	1600	1600	1333	1333	1600	1333[3]	1333	1333	1333
2 DIMM Per Channel	1333	1600	1600	1333	1333	1600	1333[3]	1333[4]	1333[4]	1333[4]

[1] Maximum capacity will vary based on individual server platform qualification schedule
[3] LRDIMM enables 2 DIMMs per channel. HP SmartMemory will supports up to 2DPC@1333 at 1.35V. Third party memory may only support 2DPC @1066 at 1.5V.
[4] For HP SmartMemory, UDIMM is supported at 2DPC@1333 at 1.35V. Third party memory may only support up to 2DPC@1066 at 1.5V.

Memory Speed by Processor Model

Processor Models	Supported Memory Speeds
E5 2470 E5-2450, E5-2450L	1600/1333/1066MHz
E5-2440, E5-2430, E5-2420, E5-2430L	1333/1066MHz
E5-2407, E5-2403	1066MHz

Standard and Maximum Memory Capacity (Pre-configured Models)

Pre Configured Models	Standard Memory	Maximum Memory Plus Optional Memory	Standard Memory Replaced with Optional Memory
Intel Xeon E5-2450	24GB (6x 4GB)	120GB (6x 16GB, 6x 4GB)	384GB (12 x 32GB)
Intel Xeon E5-2407	8GB (2x 4GB)	168GB (10x16GB, 2x4GB)	384GB (12 x 32GB)
Intel Xeon E5-2403	4GB (1x 4GB)	180GB (11x16GB, 1x4GB)	384GB (12 x 32GB)

Memory

BASIC memory slot & population diagram

Population order; looking from the front of your server CPU#1 is on right side and CPU#2 is on the left. See the population order by alphabetic and numeric progression below.

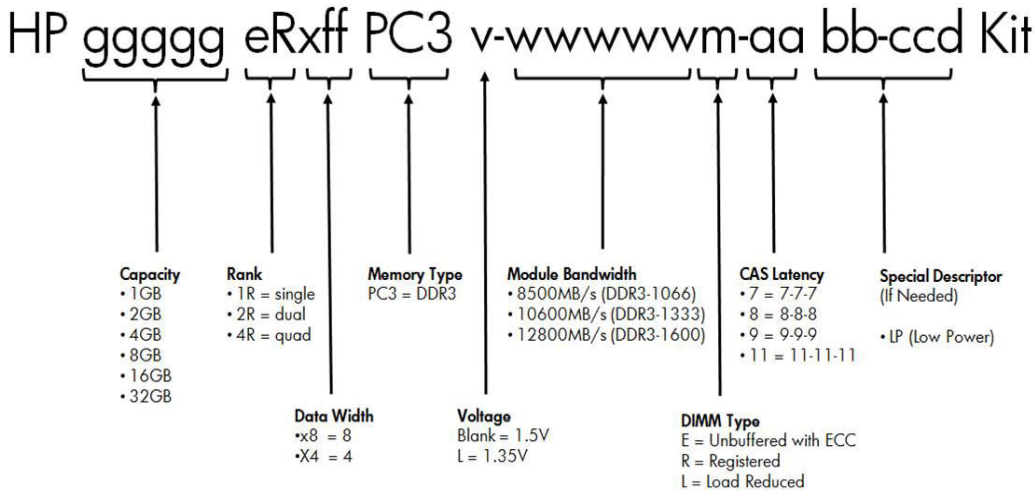
CPU #1 IS PROCESSOR ON RIGHT - LOOKING FROM FRONT OF SERVER							
	Channel 1		Channel 2		Channel 3		CPU #1
slot #	1	2	3	4	5	6	
population order	A	D	B	E	C	F	
In Order	1	4	2	5	3	6	-

CPU #2 IS PROCESSOR ON LEFT - LOOKING FROM FRONT OF SERVER							
	Channel 1		Channel 2		Channel 3		CPU #2
slot #	1	2	3	4	5	6	
population order	A	D	B	E	C	F	
In Order	1	4	2	5	3	6	-

NOTE: Capacity references are rounded to the common Gigabyte values.

- 1GB = 1024MB
- 2GB = 2048MB
- 4GB = 4096MB
- 8GB = 8192MB
- 16GB = 16384MB
- 32GB = 32768MB

DDR3 memory options part number decoder



Memory

Following are memory options available from HP:

HP Memory

NOTE: To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html (Worldwide)

NOTE: HP memory from previous generation servers are not fully compatible with the DL360e Gen8 Server.

Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647895-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647897-B21
HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647899-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	690802-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647901-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672631-B21

Unbuffered with ECC DIMMs (UDIMMs)

HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669320-B21
HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647905-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669322-B21
HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647907-B21
HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669324-B21
HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647909-B21

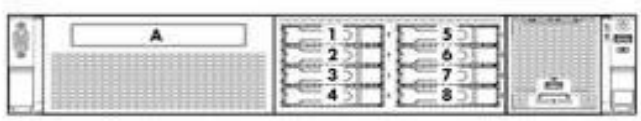
Load Reduced DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647903-B21

NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.

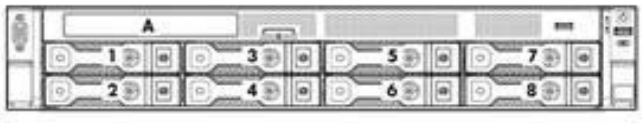
NOTE: PC3L is a low voltage memory.

Storage



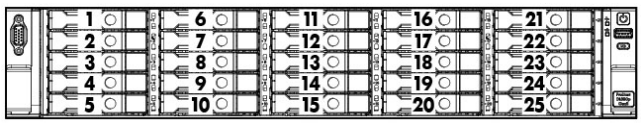
A Optical Media Bay optional

1-8 8 x SFF SATA/SAS/SDD Hot Pluggable Hard Drive Bays

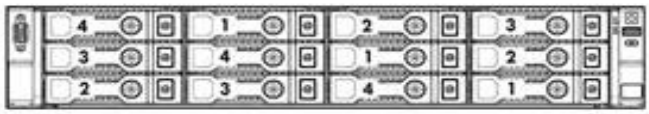


A Optical Media Bay optional

1-8 8 x LFF SATA/SAS/SDD Hot Pluggable Hard Drive Bays



1-25 25 x SFF SATA/SAS/SDD Hot Pluggable Hard Drive Bays



1-4, 1-4, 1-4 12 x LFF (1:1) SATA/SAS/SDD Hot Pluggable Hard drive bays with point to point backplane

Maximum Storage Capacity - (with D2700)

Internal (25 SFF Drive Cage)	32.4TB (27 x 1.2TB SAS/SATA SFF with 25SFF drive cage + Rear 2SFF drive cage)
Internal (12 LFF Drive Cage)	56TB (14 x 4TB SAS/SATA LFF with 12LFF drive cage + Rear 2LFF drive cage)
External	240TB (200 x 1.2TB SAS SFF)
Total (25 SFF Drive)	272.4TB
Total (12 LFF Drive)	296TB

System Unit	**Dimensions - with bezel** (H x W x D)	SFF Drives: 3.44 x 17.54 x 27.5 in (8.75 x 44.55 x 69.85 cm) LFF Drives: 3.44 x 17.54 x 29.5 in (8.75 x 44.55 x 74.94 cm)	
	Weight (approximate)	Maximum (all hard drives: front + rear,full power supply, and processor installed)	71.20 lb (32.30 kg)
		Minimum (one SFF hard drive, single power supply, and processor installed. HDD not installed)	30.80 lb (14.00 kg)
	Input Requirements (per power supply)	Rated Line Voltage	100 to 120 VAC 200 to 240 VAC
		Rated Input Current	For 1200 W Power Supply: 10 A (at 100 VAC), 4.9 A (at 200 VAC) For 750 W Power Supply: 8.9 A (at 100 VAC), 4.3 A (at 200 VAC) For 460 W Power Supply: 5.5 A (at 100 VAC), 2.6 A (at 200 VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	For 1200 W Power Supply: 930 W (at 100 VAC), 1348 W (at 200 VAC) For 750 W Power Supply: 857 W (at 100 VAC), 824 W (at 200 VAC) For 460 W Power Supply: 526 W (at 100 VAC), 505 W (at 200 VAC)
	BTU Rating	Maximum	For 1200 W Power Supply: 3530 BTU/hr (at 100 VAC), 4600 BTU/hr (at 200 VAC) For 750 W Power Supply: 2925 BTU/hr (at 100 VAC), 2812 BTU/hr (at 200 VAC) For 460 W Power Supply: 1794 BTU/hr (at 100 VAC), 1725 BTU/hr (at 200 VAC)
	Power Supply Output (per power supply)	Rated Steady-State Power	For 1200 W Power Supply: 800 W (at 100 VAC), 900 W (at 120 VAC), 1200 W (at 200 to 240 VAC) For 750 W Power Supply: 750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC)

		For 460 W Power Supply: 460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)
	Maximum Peak Power	For 1200 W Power Supply: 800 W (at 100 VAC), 900 W (at 120 VAC), 1200 W (at 200 to 240 VAC) For 750 W Power Supply: 750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC) For 460 W Power Supply: 460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)
System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	Operating	3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

Acoustic Noise

Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).

NOTE: The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

Idle	**1P Non- Redundant SKU**	**2P Redundant SKU**
LWAd	5.8 B	5.4 B
LpAm	41 dBA	38 dBA
Operating	**1P SKU**	**2P SKU**

		LWAd	5.9 B	5.7 B
		LpAm	42 dBA	41 dBA
	Emissions Classification (EMC)	FCC Rating	Class A	
		Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS14336-1; CNS13438; GB4943; GB9254; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1	

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.
NOTE: The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

HP Dynamic Smart Array B120i Controller	**Dimensions**	Embedded
	Disk Drive Interface - Transfer rate	Up to 6Gb/s SATA (Serial ATA)
	SATA Connectors	6 internal connectors w/hot plug support
	Server Interface	Intel® C600 Series Chipset integrated SATA controller
	SATA Speed	3Gb/s SATA links
	Cache Memory	optional 40-bit 512MB ECC protected Flash Backed Write Cache (FBWC)
	Logical Drives Supported	Zero Memory, Up to 2 logical volumes (6 physical drives)
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	Hot Plug Support	Yes
	RAID Support	RAID 0 (Striping), RAID 1 (Mirroring) RAID 1+0 (Striping & Mirroring) RAID 5 with optional 512MB FBWC **NOTE:** 512 MB cache is required to enable RAID 5 support

Technical Specifications

HP Dynamic Smart Array B320i Controller	**Dimensions**	Embedded
	Disk Drive Interface - Transfer rate	Up to 6Gb/s SAS (Serial Attached SCSI) Up to 6Gb/s SATA (Serial ATA)
	Connectors	2 internal 4X connectors
	Server Interface	x4 PCIe 2.0 provides 4GB/s maximum bandwidth
	Speed	8 x 6Gb/s SAS links provide 4.8GB/s maximum bandwidth
	Logical Drives Supported	Zero Memory, Up to 2 logical volumes (8 physical drives) Up to 64 logical drives with cache
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	Hot Plug Support	Yes
	RAID Support	RAID 0 (Striping), RAID 1 (Mirroring) RAID 1+0 (Striping & Mirroring) RAID 5 with optional 512MB FBWC **NOTE:** 512 MB cache is required to enable RAID 5 support. **NOTE:** NO SAS supported.
HP Smart Array P420 Controller	**Dimensions**	Low Profile PCIe Form Factor
	Disk Drive and Enclosure Interface - transfer rate	6Gb/s SAS (Serial Attached SCSI) 3Gb/s SATA (Serial ATA)
	SAS Connectors	2 internal 4X connectors
	Cache Memory Speed	DDR2-800MHz with 40 or 72-bit wide bus
	Server Interface	x4 PCIe 2.0 provides 2GB/s maximum bandwidth
	SAS Speed	8 6Gb/s SAS links provide 4.8GB/s maximum bandwidth
	Cache Memory	Zero Memory RAID has no cache memory 40-bit 256MB ECC protected cache (battery upgrade available) 72-bit 512MB BBWC or 72-bit 512MB and 1G FBWC Zero Memory, Up to 2 logical volumes (8 physical drives)
	Logical Drives Supported	Up to 64 logical drives with cache
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6, 6+0 (Advanced Data Guarding) **NOTE:** RAID 6, 6+0 can be enabled with one of the following combinations: • 256 MB cache, Battery kit and Smart Array Advanced Pack License key option upgrades • 512 MB BBWC/FBWC and Smart Array Advanced Pack License key option upgrades • 1G FBWC and Smart Array Advanced Pack License key option upgrades RAID 5, 5+0 (Distributed Data Guarding) **NOTE:** A minimum or 256 MB cache is required to enable RAID 5, 5+0 support RAID 1+0 (Striping & Mirroring) RAID 0 (Striping), RAID 1 (Mirroring)

Technical Specifications

HP Ethernet 1Gb 4-port 366i Adapter	**Network Interface**	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	EEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
		IEEE 1588, IEEE 802.1AS	
		IEEE 802.3az - Energy Efficient Ethernet (EEE)	
	Data Transfer Method	PCI Express v 2.0, 5.0 GT/s, two lanes (x2)	
	Controller	I350 Powerville	
	Number of Ports	4	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s per port, 40 Mb/s combined
		10Base-T (Full-Duplex)	20 Mb/s per port , 80 Mb/s combined
		100Base-TX (Half-Duplex)	100 Mb/s per port, 400 Mb/s combine
		100Base-TX (Full-Duplex)	200 Mb/s per port, 800 Mb/s combined
		1000Base-TX (Half and Full-Duplex)	1000Mb/s per port, 4000 Mb/s combined
	Connector	Two RJ-45	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		10/100/1000Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)

Environment-friendly Products and Approach	**End-of-life Management and Recycling**	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

Technical Specifications

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.